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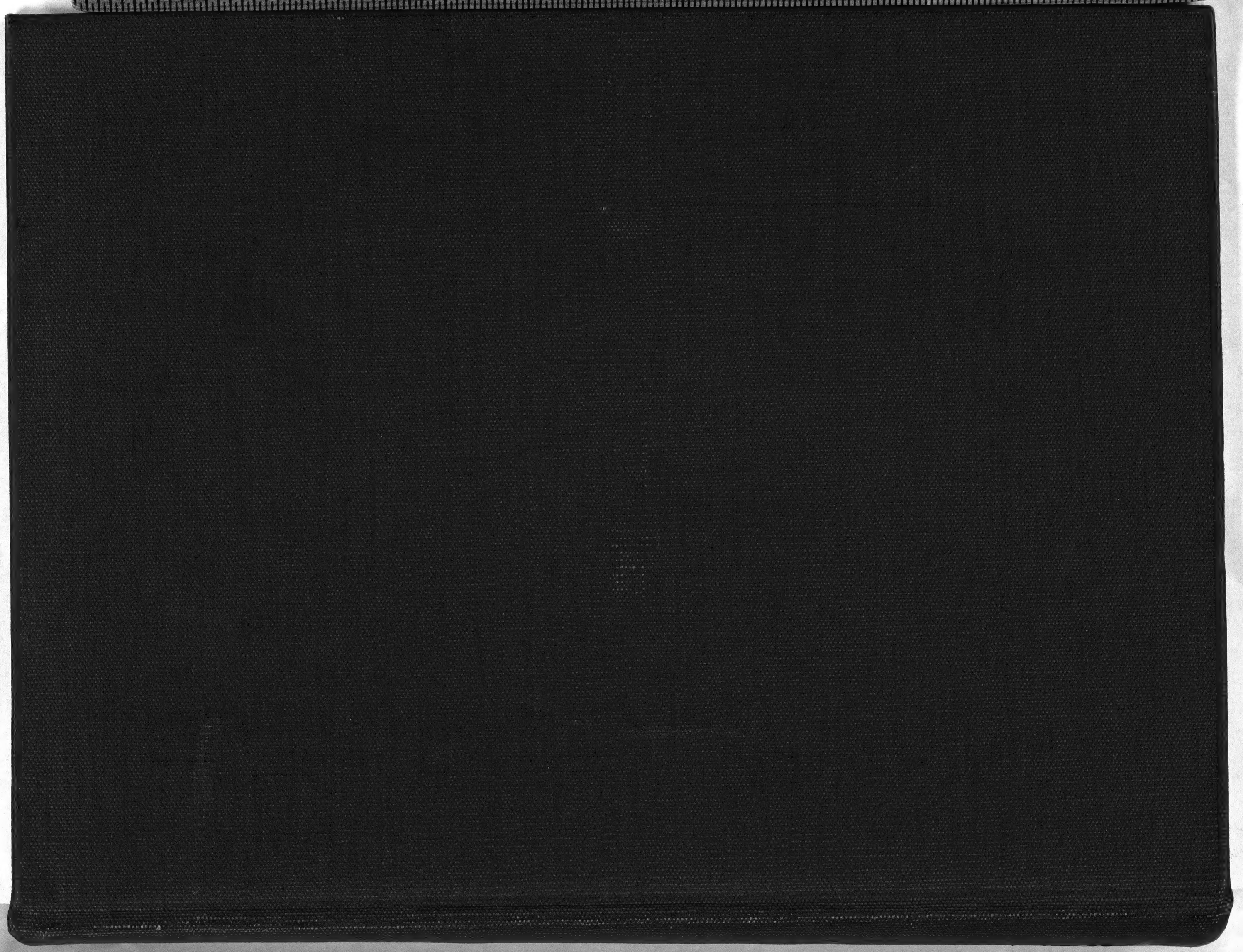

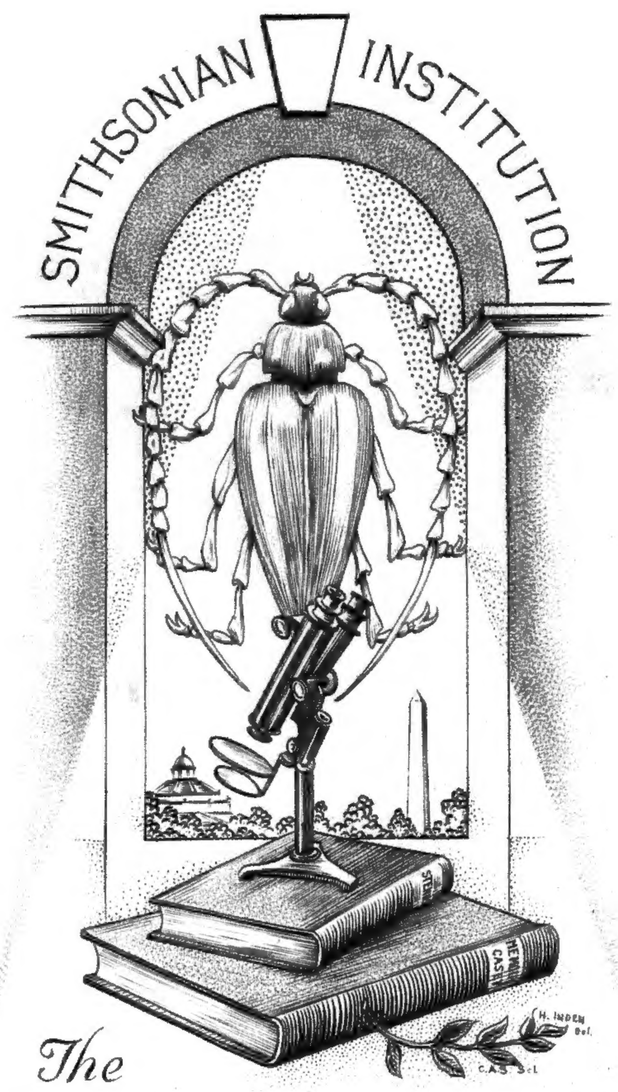

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BIOLOGIA CENTRALI-AMERICANA.

INSECTA.

COLEOPTERA. Vol. IV. Part 6.

BY

DAVID SHARP, M.A., F.R.S., &c.; W. F. H. BLANDFORD, F.Z.S., &c.;
AND KARL JORDAN, M.A.L., Ph.D.

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PLATES.

INTRODUCTION.

THIS Volume is devoted to the enumeration of three families of Rhynchophora—the Brenthidæ, Scolytidæ, and Anthribidæ,—which have been dealt with by Dr. D. Sharp, Mr. W. F. H. Blandford, and Dr. K. Jordan respectively. These families are all well-represented in Central America, as noted by the authors in their introductory remarks (pp. 1, 2, 81–88, 299, 300), the total number of species being as follows:—Brenthidæ 140, with 104 new; Scolytidæ 271, with 181 new; and Anthribidæ 193, with 148 new. One species of Brenthidæ and ten of Scolytidæ have since been added by other authors, and a list of these is appended at the end of the Volume. Of the fourteen Plates, three are devoted to Brenthidæ, six to Scolytidæ, and five to Anthribidæ: the first nine have been drawn by Mr. E. Wilson, of Cambridge, and the remainder by Mr. H. Knight, these latter being coloured.

ED.

February 1907.

ERRATA ET CORRIGENDA.

Page	Line	
222	11, 14	for *costellatus* read *cancellatus*.
254	43	for *macroceros* read *macrocerus*.
304	14	for *vittatus* read *bivittatus*.
312	24	for **gibbosus** read **gibbosa**.
321	37	for *fulvipes* read *fulvitarsis*.
369	21	*for* PANAMA, Caldera in Chiriqui, *read* GUATEMALA, Calderas.

ZOOLOGIA.

Class INSECTA.

Order COLEOPTERA.

Tribe RHYNCHOPHORA.

Fam. BRENTHIDÆ.

This family of Rhynchophora consists at present of about 500 species. About 125 have been found in our province. The very large proportion of forms found in Central America is due to the fact that the family is almost peculiar to the forests of the tropics, and that few species are known from Africa. Hence the larger part by far of the known species have been procured from the Neotropical region, and from Madagascar and the Indo-Malay regions. A comparison of the number of our species with that found in any one of the above regions would probably show no great disproportion to exist.

The Brenthidæ include many very strange forms, conspicuous on account of their long narrow shape. They are also remarkable for the great disparity between the sexes. Indeed it is probable that the neglect of these insects by entomologists is due to this, combined with the almost complete absence of species from the European and North-American faunas. The classification in vogue is based entirely on the males, and is far from satisfactory. Hence nothing of any value can be said as to the geographical distribution of the genera and groups of genera. Most of the species of our region are apparently distinct from those of South America. The majority of the Brenthidæ described from the South-American continent are, however, from Brazil; so that it is possible that when the species of the northern parts of that continent are better known many of the Central-American forms may be found there. Some of the species of Brenthidæ are already known to have a very extensive range, *Brenthus*

anchorago being found from Rio Janeiro to Mexico. This, however, is, I think, an exceptional case, as I have examined a small series of Brenthidæ collected by Dr. Sahlberg near Rio Janeiro, and find that two or three species are all that can be considered identical with Central-American forms.

Subfam. *BRENTHINÆ.*

Group **TAPHRODERINA.**

TAPHRODERES.

Taphroderes, Schönherr, Disp. Meth. p. 72 (1826); Gen. Curc. i. p. 366 (1833).

This genus is peculiar to Tropical America, whence seven species have at present been described. The species are, however, no doubt numerous; they are very similar in appearance when the upperside only is looked at, but the lower surface of the body presents characters by which the species may be distinguished with ease. The sections I here adopt for the discrimination of our species will probably not suffice for an arrangement of the whole genus, as I have a *Taphroderes* from Petropolis that, as regards the structure of the metasternal crest, differs from all the species of our region. The terms I have used in describing the under surface are as follows:—"Abdominal sulcus," for the groove running along the abdominal segments; it is more or less deeply foveolate at the base, the basal portion being sometimes all that exists: "metasternal groove," for the groove running along the middle of the metasternum, and extending nearly or quite to a transverse depression in front, the "metasternal fossa"; this fossa is bounded just behind the middle coxa by a process I call the "metasternal crest." The "poststernum" means the part of the prothorax behind the front coxæ; the "prosternum," the part in front thereof. There is very little difference externally between the sexes of this genus.

In describing the sculpture of the elytra I have throughout treated the sutural interstice as being the first interstice. Schönherr and others have spoken of the second interstice as being the first, calling my first interstice the sutural interstice. This course, however, renders the phraseology of descriptions more complex, without, so far as I see, offering any real advantage.

I have called the part of the rostrum anterior to the insertion of the antennæ the "prorostrum," and the part between the antennæ and the eyes the "metarostrum."

The Taphroderides are probably all predaceous insects: their peculiar structure allows the legs to be packed close to the body when the insect enters a burrow in wood in search of its prey.

§ 1. *Metasternum sulcate; metasternal crest bi-emarginate, being toothed in the middle.*

1. **Taphroderes rectus,** sp. n. (Tab. I. fig. 1.)

Angustus, nigerrimus; elytris lineis duabus flavis, rectis et in medio late interruptis; apicem versus vix punctulatis.

Long. 10–14½, lat. 1 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Antennæ black, slender; club well marked, elongate; joints 2–8 moniliform, the eighth as long as broad, the ninth joint much longer and considerably broader than the eighth. Head elongate, rather narrow; eyes placed just halfway between the front of the thorax and the insertion of the antennæ. Thorax rather deeply channelled in front, finely so behind, black, very shining, finely and very distinctly punctulate. Elytra slender, black, with a pair of elongate, exactly parallel, yellow lines extending from the base to near the middle, beyond the middle they again appear as quite parallel shorter marks; tip quite black; the common apical emargination or arch deep, narrow. Apical segments of abdomen rufescent. Abdominal sulcus broad behind, with a lateral porous projection on each side, the two being but little approximate, so that they render the exit from the groove only slightly narrower; anterior part of sulcus narrow, extremely deep, its sides rather abruptly distinguished from the sides of the posterior part of the groove. Metasternal groove deep, in front broad and very deep, the anterior limit evidently tridentate. Prosternum deeply sulcate, the groove extending to the tip; poststernum rather broadly foveolate.

There is but little difference between the sexes; the male has the terminal ventral plate hairy, and the apical arch of the elytra rather broader and less angular.

Twelve specimens, showing very little variety, except in size.

2. **Taphroderes mexicanus,** sp. n.

Angustus, nigerrimus; elytris lineis duabus flavis in medio interruptis, quarum partibus anterioribus haud omnino parallelis, sed posterius paululum divergentibus.

Long. 6½–13 millim.

Hab. Mexico, Toxpam (*Sallé*), Jalapa (*Höge*).

Var. Major, robustior, pronoto medio rufescente.

Long. 15 millim.

Hab. Guatemala, Tamahu in Vera Paz (*Champion*).

Very similar to *T. rectus*, but easily distinguished, as regards the upper surface, by the fact that the anterior portions of the yellow lines are not parallel, so that if they were continued they would fall outside the posterior portions. The prothorax is not canaliculate behind. On the under surface the abdominal sulcus is narrower behind,

so that the two porous projections have only a narrow channel between them. The metasternal fossa is shorter; the post-sternum not definitely foveolate.

Six specimens; of the variety I have seen only one individual.

3. **Taphroderes tostus,** sp. n.

Niger, pronoto posterius rufescente, ibique opaco; elytris lineis duabus rectis flavis in medio late interruptis.
Long. 15 millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

We have received only one specimen of this species, which appears to be distinct from both *T. rectus* and *T. mexicanus*, though very closely allied. In the sulcation of the under surface it agrees with the latter species, but by the form of the yellow lines on the elytra it agrees better with *T. rectus*; from both species *T. tostus* may be readily enough distinguished by the dull red colour of the posterior part of the thorax, and by the coarse punctures which exist on the middle of this opaque part of the surface.

4. **Taphroderes apicalis,** sp. n.

Angustus, niger, capite thoraceque medio rufescentibus; elytris basi lineis duabus flavis, apice flavo quadriplagiatis, apicibus subexplanatis.
Long. $5\frac{1}{2}$–11 millim.

Hab. NICARAGUA, Chontales (*Belt, Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Very closely allied to *T. rectus*, but readily distinguished by the colour of the upper surface and by a slight difference in the form of the apices of the elytra; it is, too, a somewhat less elongate insect. Head vaguely rufescent or picescent; thorax rufescent along the middle, very distinctly so in front. Elytra black, marked on the basal part with two elongate, nearly parallel, yellow marks; just behind the middle with two yellow marks, each broad in front, narrower behind, and at the apex with a smaller mark somewhat prolonged externally; the apices forming conjointly an arch not at all angulate in the middle. Under surface similar to that of *T. rectus*, but with the abdominal sulcus less broad behind; the middle tooth in front of metasternal fossa very indistinct. The poststernum foveolate.

Seven specimens.

§ 2. *Metasternum sulcate; metasternal crest simply curved, crescent-shaped.*

5. **Taphroderes beltianus,** sp. n. (Tab. I. fig. 2.)

Robustior, nigricans, hinc inde rufescens; elytris guttis flavis ornatis; abdominis sulco posterius profundo; metasterno fossa, post cristam, parum profunda.
Long. 9–19 millim.

Hab. NICARAGUA (*Sallé*), Chontales (*Belt, Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Antennæ broad, all the joints except the first and last transverse, the ninth slightly longer but scarcely broader than the eighth. Thorax very elongate, canaliculate in front, and with a finer short channel at the base. Elytra with three short yellow marks, linearly arranged near the suture, each one extending in a vague manner outwards; the tip broadly reddish yellow. Apical ventral segments not punctate. Abdominal sulcus broad and deep, quite open behind, the distinct porous prominences being widely separated. Metasternal groove broad, but becoming obsolete in front, so that it does not attain the scarcely perceptible metasternal fossa; the crest in front of this latter very definite, but not strongly prominent in consequence of the slight depression of the fossa behind it. Prosternum sulcate; the sulcus not extending to the tip; poststernum foveolate. Legs stout, very much compressed.

Twelve specimens.

6. **Taphroderes ventralis,** sp. n. (Tab. I. fig. 3, under surface.)

Niger, politus, hinc inde vage rufescens; elytris guttis sex flavescentibus parum distincte ornatis; abdominis sulco posterius obsoleto; metasterno fossa, post cristam, profunda.

Long. 10–16 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*).

This insect is extremely similar to *T. beltianus* on the upper surface, but is a little more slender; the antennæ are not so thick near the base; the thorax is polished in front, and has no trace of the obsolete lateral margin that is always present to some extent in *T. beltianus*; and the yellow marks on the elytra are less elongate. The under surface is different in the two species, the structure of the abdomen in *T. ventralis* being very curious: the posterior or vertical face of the elongate part is quite perpendicular and is unusually large, and there is a remarkable definite division between the horizontal and the perpendicular portions; the abdominal sulcus is very deep and broad in front, but becomes obsolete behind, and there are no porous spaces, but in their place are some small projections—not amounting to tubercles—on the prominent edge between the horizontal and perpendicular parts of the segment. The metasternal groove is definite and ends in front in the deep sharply defined transverse depression behind the metasternal crest. The poststernum is broadly sulcate; the prosternum vaguely sulcate in front, more deeply so behind.

Three specimens.

§ 3. *Metasternum not sulcate; metasternal crest obsolete.*

7. **Taphroderes oscillator,** sp. n. (Tab. I. fig. 4, apices of the elytra of ♀.)

Angustus, niger, hinc inde piceo-rufescens; elytris guttis vagis quatuor flavis, angulis posterioribus externis haud deflexis, prolongatis.

Long. 8 millim.

Mas. Antennis articulis 3°–6^{m} barbatis, quarto sextoque quam contiguis paulo latioribus.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Antennæ rather slender, with elongate club, the ninth joint twice as long as the eighth. Head rather broad, short. Pronotum canaliculate in front, scarcely so behind. Elytra very narrow, each with a yellow spot just before, and another behind the middle; the apex and the tip of the abdomen either black or rufescent; the apices are somewhat prolonged and explanate, so as to form a more distinct notch than is found in our other species. Abdominal sulcus narrow, in front very deep. Metasternum behind indistinctly channelled; in front with a scarcely elevated transverse crescent. Prosternum not sulcate. First joint of hind feet very long, as long as the tibia.

Three examples were found of this very distinct species.

ABACTRUS, gen. nov.

Characteres fere ut in genere *Taphroderide*, sed abdomine breviore, segmentis 1° et 2° simul sumtis femoribus posterioribus haud longioribus.

The two species for which I propose this genus are not connected by intermediate forms with *Taphroderes*; as the form of the abdomen and its relation to the hind femora is of considerable importance in these predaceous Brenthidæ, I think the genus will prove a valid one. The second species is Brazilian *.

1. **Abactrus championi,** sp. n. (Tab. I. fig. 5.)

Nigerrimus, nitidus, supra impunctatus; elytris apice leviter emarginato.
Long. 6 millim.

Hab. Panama, Bugaba (*Champion*).

Antennæ rather long, loosely articulated; seventh and eighth joints wider than the preceding, ninth and tenth subquadrate, eleventh not quite so long as the preceding two together. Rostrum broad and short, dilated towards the tip. Thorax without channel or punctuation, almost as long as the elytra. Elytra without punctuation; with a feeble common emargination at the tip. Apical ventral segments not punctate. Abdomen not sulcate, the hind margin of the prominent part porous on the middle; the suture between the two elongate segments distinct, the base deeply foveolate. Metasternum not sulcate, without crest or fossa; mesosternum polished and impunctate

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* **Abactrus sahlbergi,** sp. n.

Castaneus, nitidus, supra piceus, elytris vage testaceo-fasciatis; abdomine basi profunde foveolato.
Long. 7 millim.

Antennæ short and stout, none of the joints longer than broad, 4–8 each distinctly transverse, 9, 10 subquadrate, 11th as long as the preceding two together, acuminate. Thorax almost ecanaliculate. Elytra with two vague fasciæ and the tip yellowish; apical emargination scarcely present. Mesosternum coarsely punctate. Poststernum canaliculate; prosternum not canaliculate.

Hab. Brazil, Santa Rita, August 1850 (*Sahlberg*: no. 4555 of his collections).

in front of the coxa. Prosternum not sulcate. Tarsi strongly compressed, broad in one direction.

Only one individual was found of this interesting little insect; it is no doubt of the male sex; the antennæ have much setosity on the lower surface.

Group **STEREODERMINA.**

The Trachelizides of Lacordaire should be divided into two groups: one, represented by *Stereodermus*, has the anterior tibiæ more or less excised, and the hind coxæ more than usually distant from one another; while the other, including *Trachelizus*, has the anterior tibiæ unnotched, and the hind coxæ separated by only the width usual in the Brenthidæ. The group Stereodermina is here proposed for the first-mentioned forms. On the other hand, Lacordaire's tribe Hephebocerides, consisting of two genera, *Ionthocerus* and *Hephebocerus*, should be suppressed; *Ionthocerus* being placed in Stereodermina, *Hephebocerus* in Trachelizina.

STEREODERMUS.

Stereodermus, Lacordaire, Gen. Col. vii. p. 419 (1866).

This genus of small Brenthidæ consists of one Mexican, one Antillean, and one South-American species, in addition to another recently added by Dr. Senna from the island of Engano in the Austro-Malayan province.

I now describe sixteen species from our region. I have several Brazilian representatives of the genus in my collection, all of which, except one, are distinct from our species and are undescribed. The sexes in *Stereodermus* have not yet been satisfactorily distinguished. I find that in certain individuals there is a slight mucronation of the internal faces of the apices of the middle and hind tibiæ. This is probably indicative of the male sex; and if I am right in this conjecture we may conclude that the sexes are extremely similar, but that the male is distinguished by the character mentioned, by a different sculpture of the last ventral plate, and by the prorostrum, or anterior part of the rostrum, being just perceptibly less elongate than it is in the other sex.

The *Stereodermi* seem to be rather rare insects, as of our sixteen species only two are represented by a good series of examples.

I arrange our species in two groups, distinguished as follows:—

Rostrum short and broad, prorostrum not greatly longer than broad. (Tab. I. fig. 11.) . . . . . Species 1–14.
  Greater portion of under surface of head dull; front tibiæ very deeply notched. (Tab. I. fig. 6 *a*.) . . . . . Species 1–6.
  Under surface of head entirely, or in greater part, shining; tibial notch more or less shallow . . . . . Species 7–14.
Prorostrum longer and more slender, much longer than broad . . . . . Species 15, 16.

1. Stereodermus pygmæus.

Arrhenodes pygmæus, Gyll. in Schönh. Gen. Curc. i. p. 333 [1].
Cerobates pygmæus, Schönh. Gen. Curc. v. 2, p. 489 [2].
Stereodermus pygmæus, Gemm. & Harold, Cat. Col. ix. p. 2705 [3].
Stereodermus brevirostris, Senna, Bull. Soc. Ent. Ital. xxi. p. 33 [4].

Hab. MEXICO [1 2 3 4], Playa Vicente, Toxpam, Orizaba (*Sallé*), Cerro de Plumas Jalapa (*Höge*), Motzorongo (*Flohr*); GUATEMALA, San Juan in Vera Paz, Capetillo, Zapote, Las Mercedes (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).—SOUTH AMERICA, Boa Sorta (*Sahlberg*, Nov. 1850).

If I am right in treating all the individuals before me as one species, *S. pygmæus* is variable as regards size, colour, sculpture, and some more important characters, such as the extension of the channel on the head and the form and sculpture of the terminal plate of the venter. I have not been able to discriminate the sexes with certainty, and I am therefore at present disinclined to distinguish more than one species. The descriptions extant are by no means sufficiently good to enable one to recognize exactly the insect that was before the describers' eyes; but as all those who have dealt with the species have had Mexican examples before them, there is little doubt that the name should be ascribed to the only common Mexican species of the genus.

The length varies from 4 to 7 millim.; the channel on the rostrum is sometimes abbreviated between the eyes, in other cases it is prolonged, as a more or less fine channel, to the back of the head. The eyes are moderately large and extend very nearly to the back of the head. The thorax bears a few very distant and minute punctures. The elytra have the sutural interstice shining; the second interstice is shining, but extends only about one-fourth of the length; the third interstice is depressed, fine, placed at the bottom of a groove, and is usually dull but sometimes shining; the fourth interstice is not carinate, and the punctures by which it is separated from the third are not easily distinguished, outside it runs a series of punctures that are placed on the most elevated part of the wing-case; the fifth interstice starts from the shoulder but becomes quite indistinct, to reappear again at the apex as a short carina; outside this the surface is shining and bears coarse punctures, but the longitudinal raised interstices are abbreviate. The terminal ventral plate is highly polished and is sometimes free from punctures, while in other cases it has some very large punctures, variable in number; the penultimate ventral plate is either truncate or rounded behind.

Some of the following species are very similar to certain of the varieties of *S pygmæus*, but I think they are really distinct; indeed, I shall not be surprised if it prove that there are more than one species amongst the specimens I have called *S. pygmæus*. Dr. Senna is now of opinion that his *S. brevirostris* is not truly distinct from *S. pygmæus*. His type represents the ordinary form of the species. Some examples

from Mexico may possibly be distinct from *S. pygmæus*, which, however, appears to be the only *Stereodermus* at all common there. From Panama we have received only two examples.

2. **Stereodermus longiceps,** sp. n. (Tab. I. figg. 6; 6 *a*, front tibia.)

Angustus, rufo-testaceus, nitidus; capite post oculos longiore; prothorace impunctato, late sulcato; elytris fortiter punctatis, interstitio tertio discreto, nitido.

Long. $5\frac{1}{2}$–$7\frac{1}{2}$ millim.

Hab. GUATEMALA, Las Mercedes (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Extremely similar to the more robust and shining varieties of *S. pygmæus*, but with the head rather longer behind the eyes.

Channel of rostrum and head simple, the lateral ridges that limit it shining, not interrupted. Thorax distinctly narrowed towards the front, very shining, with scarcely any trace of punctuation. Elytra with the sculpture very similar to that of *S. pygmæus*, but the row of punctures on the elevated fifth interstice larger, the third interstice more distinct and not in the least opaque. Front tibiæ very broad, the processes forming the notch large. Head opaque beneath.

Four examples. The unique specimen from Las Mercedes is a variety of very small size.

3. **Stereodermus latirostris,** sp. n.

Robustus, sordide rufus, fere opacus, prothorace disco nitido; rostro carinulis ante-ocularibus opacis, crassiusculis; elytris parum discrete punctatis, interstitio tertio lato, opaco, quinto carinato, nitido.

Long. $5\frac{1}{2}$–8 millim.

Hab. GUATEMALA, Teleman (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Volcan de Chiriqui (*Champion*).

Antennæ long and thick. Rostrum broad; the insertion of the antennæ rather far from the eyes, the space between the two dull, the channel not divided, rather fine on the posterior part. Vertex shining, not divided, sparingly punctate, the posterior angles prominent. Thorax deeply constricted near the front, the channel broad, the sides dull, sparingly setose, the disc shining, almost impunctate. Elytra rather broad, the sutural interstice shining, the others dull, except that the fifth, which forms the most elevated part of the elytron, is a little shining; punctures moderately large, but subobsolete; the carinula-like interstices on the apex much less distinct than usual. Front tibiæ very broad, their notch very large and deep. Under surface of the head dull to as far forwards as the insertion of the antennæ. Ventral segments opaque.

A series of about forty individuals was obtained of this species; most of them are from the Volcan de Chiriqui at low elevations. It varies but little. I think the sexes may be distinguished by the mucronation of the apices of the middle and hind tibiæ in the male. The very large and deep metasternal and abdominal depressions are as strongly marked in the female as they are in the male.

4. **Stereodermus carinatus,** sp. n.

Gracilis, piceus, nitidus, prothorace parce subtiliter punctulato; elytris intervallis fortiter carinato-elevatis, punctatura indiscreta.
Long. 5½–7 millim.

Hab. GUATEMALA, Zapote (*Champion*).

Very similar superficially to the larger and darker examples of *S. pygmæus*, but readily distinguished by the strong carina-like interstices of the elytra and by the punctuation being indistinct on them. Antennæ thick, broad. Channel on the rostrum elongate, its lateral boundaries between the eyes and the insertion of the antennæ somewhat depressed and opaque: the groove continued to the vertex. Vertex with the angles rounded. The thorax sparingly but distinctly punctate. Fifth, sixth, and seventh interstices of the elytra each elongate and carina-like. On the under surface the head is dull and similar in the arrangement of the setæ and other respects to that of *S. pygmæus*. The tibiæ are not quite so broad as they are in *S. pygmæus*, and the notch and its processes are less pronounced.

Seventeen specimens.

Var. **tenuis.**

Angustior, elytrorum punctatura haud adeo indiscreta.
Long. vix 5 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

The var. *tenuis* is represented by a single specimen only; in addition to the distinction of punctuation it appears to me to have the tibial process of the front legs smaller, and the opaque space on the under surface of the head narrower. If this should be confirmed, it will probably prove to represent a distinct species.

5. **Stereodermus chontalensis,** sp. n.

Elongatus, angustus, rufo-piceus, nitidus; antennis crassis, articulo ultimo elongato; prothorace minus subtiliter punctato; elytris fortiter punctatis, intervallis minus carinato-elevatis.
Long. 6–8 millim.

Hab. NICARAGUA, Chontales (*Belt, Janson*); PANAMA, Volcan de Chiriqui (*Champion*).

This species, on account of the distinct punctuation of the thorax, is only likely to be confounded with *S. puncticollis* and *S. carinatus*; from the latter species *S. chontalensis* is distinguishable by a glance at the less carinate interstices of the elytra, while from *S. puncticollis* it is also easily to be distinguished by the very distinct coarse punctures of the elytra, and by the broad front tibiæ furnished with a large notch.

The last joint of the antenna is a little longer than usual. The head is rather short and broad; the hind angles are distinct; the sulcus is rather elongate, connected with the emargination on the vertex only by a fine channel, its lateral boundaries

shining; the front part of the rostrum is broad. The thorax is deeply constricted near the front, shining, with rather numerous somewhat coarse punctures. Elytra narrow; the second interstice somewhat longer than usual, the fourth distinct though crenate, the fifth carinate; the punctuation of the external part very coarse and distinct. Legs thick; front tibiæ very broad, with large notch. Underside of head shining on each side, with a broad dull space on the middle; this space is scarcely sulcate, but is continued forwards as far as the front of the pterygia, which are very distinct, being highly polished.

We have received four specimens of this species from Chontales, none of them being in perfect condition; from Chiriqui we have received a single example, it is of considerably larger size than those from Chontales.

6. **Stereodermus breviceps,** sp. n.

Parvus, angustus, rufus, nitidus; capite brevi, oculis prominulis; thorace minus subtiliter punctato; elytris intervallis angustis, secundo integro, quinto subcarinato, striis profundis.
Long. $4\frac{1}{2}$–5 millim.

Hab. GUATEMALA, Panima in Vera Paz, Cerro Zunil (*Champion*).

Like the smallest and narrowest examples of *S. pygmæus.* Club of antennæ not very definite, its first two joints bead-like. Head short and broad, with the antennæ inserted a little nearer to the eyes than in the other species of the genus, and the vertex divided by an unusually broad groove; the sides of the rostral groove indefinite behind the insertion of the antennæ, and the two carinulæ over the point of insertion almost contiguous, so that the posterior part of the groove (placed on the vertex) is continuous only in a somewhat indefinite manner with the anterior part. Thorax much narrowed in front, distinctly punctulate, the transverse depression distinct only at the sides. Elytra very narrow, the second interstice visible throughout, though fine and much depressed in the middle; all the other intervals very narrow, crenate, owing to the confluence of the punctures in the grooves. Front tibiæ short, with shallow emargination. Under surface of the head broadly opaque in the middle, but with the shining area near each eye larger than in *S. pygmæus*; the setosity of the pterygia only slight, fine and scanty.

This distinct little species is only likely to be mistaken for *S. pygmæus,* from which, however, it is very distinct by numerous characters, one of the most easily appreciated of which is the feeble tibial excision.

Five specimens.

7. **Stereodermus dentipennis,** sp. n. (Tab. I. figg. 7; 7 *a*, bases of the elytra and prothorax.)

Robustus, rufus, elytris ad suturam nigricantibus, antennis piceis; prothorace parce minus subtiliter punctato; capite lato, oculis magnis, sulco mediano parum profundo, lateribus latis, opacis.
Long. $7\frac{1}{2}$–8 millim.

Hab. MEXICO, Jalapa (*Trujillo*), Cerro de Plumas (*Höge*).

Antennæ thick, the setæ very distinct. Groove of the head and rostrum rather shallow and indistinct, the sides forming it broad, with opaque surface. Thorax rounded, the surface shining, bearing a few distant coarse punctures. Elytra broad, the punctures large; the fourth interstice indistinct, the fifth carinate; the punctures outside this large, the intervals crenate. At the base of each elytron there is a distinct small prolongation, overlapping or embracing the extreme base of the prothorax. Head shining on each side beneath, with an opaque space along the middle, bounded by some setæ which extend on to the pterygia, where they become numerous. Front tibiæ rather broad, but their notch and its processes very indistinct.

Only two specimens have been procured of this distinct species; in outward appearance it at first sight resembles the species near *S. pygmæus* rather than those with obsolete tibial notch.

8. **Stereodermus mitratus,** sp. n. (Tab. I. figg. 8; 8 *a*, profile of head.)

Piceus, rostro antennisque nigricantibus, nitidus; vertice profunde emarginato, angulis liberis; prothorace fere impunctato; elytris basi emarginato, punctatura discreta, intervallis tantum subcarinatis.
Long. 6 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

This is a species in which the emargination of the front tibiæ is reduced to a minimum; at the same time the vertex is so largely developed on each side of the channel, that the posterior angles project backwards as free processes; the elytra are emarginate at the base, and form on each side a projection that embraces the base of the thorax, by which character the species comes near *S. dentipennis*, from which it differs in so many details, that the two cannot be considered closely related.

Narrow. Antennæ thick, with elongate terminal joint. Vertex quite shining, its posterior angles free and divergent. Thorax with only a very few distant and not large punctures, anterior transverse depression deep; median sulcus deep and broad, not extending quite to the base. Elytra with the punctures very coarse; the second interstice scarcely concealed even in the middle, third strongly raised, almost carinate, fourth distinct from fifth, though very much crenate by the large punctures, fifth cariniform; external punctures large. Front tibiæ with only a shallow notch and no process above it. Head shining beneath, with a groove along the middle occupied by some large punctures, in which are placed the serial setæ, the pterygia sparingly but distinctly hirsute.

Only one specimen has been procured of this species.

9. **Stereodermus godmani,** sp. n. (Tab. I. fig. 9.)

Nigro-piceus, minus nitidus, elytris nigro-rufis ; antennis crassis, conspicuiter setosellis ; prothorace parcius punctato ; elytris intervallis carinatis, punctatura fere nulla.
Long. 7 millim.

Hab. GUATEMALA, Panzos in Vera Paz (*Champion*).

Rostrum very broad, bearing a few short setæ on each side in front of the broad pterygia ; the groove between the head and antennæ quite indefinite, widely separated from the vertex, with which it is connected by a fine indistinct channel ; eyes prominent, shining, not facetted. Thorax black, dull at the sides, with a few rather fine punctures ; the transverse depression deep at the sides. Elytra with the intervals very distinct, narrow and strongly elevated : the second quite disappears in the middle, the third is distinct but dull, the fourth separated from the fifth, which is strongly elevated and shining ; the grooves on the outer part are broad and distinct, but the punctures are altogether indistinct. Front tibiæ broad, but with only a shallow excision ; all the femora with two distinct series of pallid erect setæ. Underside of head polished. Metasternum prominent, not sulcate. Abdomen only obsoletely impressed.

Only one specimen was procured of this fine species. I think it is a female.

10. **Stereodermus zunilensis,** sp. n. (Tab. I. fig. 10, antenna.)

Nigro-piceus, antennis crassis, articulo ultimo ovato ; prothorace crebre minus subtiliter punctato ; elytris intervallis carinato-elevatis, punctatura parum discreta.
Long. 7–8½ millim.

Hab. GUATEMALA, Cerro Zunil 4000 feet (*Champion*).

Antennæ thick, the joints of the club shorter than in the other species. Rostrum very broad ; its groove continued to the vertex, the lateral boundaries of its basal part depressed and dull. Thorax rather broad, much narrowed in front, distinctly punctured ; the transverse constriction well marked. Interstices of the elytra strongly elevated, narrow, second rather long, the fourth as distinct as the fifth, except at the base, where it is quite indistinct. Legs stout ; front tibiæ rather broad, their notch moderately deep. Head shining beneath, but with a longitudinal groove, along the margins of which run the serial setæ. The punctures on the sides of the metasternum sub-obsolete.

Three specimens.

11. **Stereodermus puncticollis,** sp. n.

Angustus, piceus, nitidus ; prothorace minus parce et subtiliter punctato ; elytris intervallis carinato-elevatis, punctatura parum discreta ; capite subtus nitido, pterygiis barbatis.
Long. 5½–6½ millim.

Hab. PANAMA, Volcan de Chiriqui 4000 to 5000 feet (*Champion*).

This species has some of the polished parts of the surface less free from punctuation

than others of the genus, the thorax is very distinctly punctured, and there are also quite distinct punctures on the metasternum and on the elongate ventral segments. The antennæ are thick, the club moderately long. The groove of the rostrum is connected with the vertex by a moderately broad channel; the sides of the groove are interrupted in front of the insertion of the antennæ. Thorax narrow, the surface irregular, deeply transversely depressed near the front. Elytra with the grooves deep; the interstices narrow, rather strongly elevated, the fourth separated by a deep groove from the fifth, and distinct, except at the base; the large punctures cause the intervals to be crenate, and the punctures themselves are thus rendered more indistinct. Front tibiæ broad, but their notch not deep. Under surface of the head highly polished, and without any trace of channel along the middle; the serial median setæ obsolete, but not entirely absent; the pterygia hirsute, and thus forming a strong contrast to the polished part behind them. Punctures along the side of the metasternum large.

Three specimens.

12. **Stereodermus dentipes,** sp. n.

Sat gracilis, nitidus, rufo-piceus, antennis piceis; femoribus anterioribus longe, intermediis et posterioribus breviter dentatis; prothorace evidenter punctulato; elytris intervallis carinato-subelevatis, punctatura discreta; capite subtus nitido, spatio mediano longitudinali opaco.

Long. $5\frac{1}{2}$ millim.

Hab. Panama, Bugaba (*Champion*).

This species, though similar in appearance to *S. longiceps* and *S. pygmæus*, is readily distinguished by the dentate femora. The rostrum is broad, punctulate; the eyes placed rather far from the back of the head. The thorax is a little rounded at the sides; the punctures on it are quite distinct. The elytra are quite shining; the fourth and fifth interstices are each distinct, and are separated by a very distinct row of punctures; the external series of punctures are large and distinct, but the intervals are not carinate. Tibial notch moderately deep, but not so large as in *S. pygmæus*.

Only one specimen has been procured of this very distinct species.

13. **Stereodermus barbirostris,** sp. n.

Gracilior, testaceo-brunneus, nitidus; rostro ad antennarum insertionem utrinque dense setoso; elytris profunde striatis, externe nitidis, obsolete punctatis; capite subtus nitido; tibiarum incisura parum profunda, processu superiore fere nullo.

Long. 5–6 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*).

At first sight, quite similar to the moderately large specimens of *S. pygmæus*. Antennæ large and stout. Rostrum in front of the antennæ very polished, the channel scarcely extending further forwards than the front of the pterygia; the sides from the pterygia to near the tip set with erect pallid scales; the channel interrupted between

the antennæ by two shining processes which nearly meet, the part above these short and rather obsolete; eyes extending towards the base of the head. Thorax more cylindric than in *S. pygmæus*, and shining at the sides as well as above, deeply constricted near the front and deeply sulcate along the middle; finely and distinctly punctured. Elytra with the second and third striæ much as in *S. pygmæus*, the fifth more distinctly carinate; the outer portion very shining, the punctures subobsolete and rather distant. Head beneath with a circlet of small scales at the extreme base, and with a small fovea in the middle just in front of them; perfectly polished and shining, and without serial setæ; the pterygia bearing a series of erect scales, which, being continued forwards, become visible from above as previously described; two short channels on the middle of the pterygia. Metasternum feebly, abdomen deeply depressed; the latter with the apical segments quite shining. Front tibiæ with the notch very indistinct, the process above this almost absent.

Two specimens.

14. **Stereodermus calvus,** sp. n. (Tab. I. fig. 11, head, rostrum, and antenna.)

Elongatus, dilute piceus, nitidus; antennis crassis, articulis 9° et 10° quadratis; capite utrinque post oculos haud barbato; prothorace vix punctulato, antrorsum angustato; elytris fortiter punctatis, intervallis nullis carinatis.

Long. $5\frac{1}{2}$–$7\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Joints 2 to 8 of the antennæ transverse, ninth and tenth each almost square, terminal joint distinctly longer. Head rather narrow; eyes elongate, but not very convex, no setæ visible between them and the hind margin; groove deep, connected with the back of the head by a channel; the hind angles projecting somewhat backwards and, as it were, free; the sides of the groove shining throughout, divided in front so as to form four very definite carinules between the insertions of the antennæ. Thorax much narrowed in front, the transverse constriction deep and definite, the surface very shining. Elytra quite shining; the third interstice not in the least dull, the fourth indistinct, the fifth slightly more raised than the coarse series of punctures between it and the fourth, but not at all carina-like; the punctures on the outer part of the elytra large. Front tibiæ with only a shallow, but distinct emargination. Under surface of the head shining, with only a feeble groove along the middle; the pterygia scantily setigerous.

Five specimens.

15. **Stereodermus nigriceps,** sp. n. (Tab. I. fig. 12, antenna.)

Gracilis, rufescens, nitidus, vertice nigro; rostro longiore; oculis haud prominulis; thorace subtiliter punctato; elytris nitidis, subtiliter punctatis, intervallo quinto nullo modo carinato.

Long. 5 millim.

Hab. GUATEMALA, Capetillo (*Champion*).

Antennæ with numerous but fine setæ. Head and rostrum highly polished; the channel fine, definite, rather short. Thorax slender, narrowed in front, very shining, the transverse depression not deep. Elytra shining, outside the fifth interval not grooved, and with only fine punctures; the third interval much curved, the fourth forming in conjunction with the fifth an obtuse elevation, the two bearing at their summit the series of fine punctures that separates them. Front tibiæ with large excision. Head polished beneath, the serial setæ obsolete. Metasternum sulcate. Abdominal depression large.

Only one specimen was found of this very distinct species.

16. **Stereodermus filum,** sp. n. (Tab. I. fig. 13.)

Gracilior, rufescens, politus; rostro elongato; capite angusto, elongato, oculis parvis; femoribus basi gracilibus. Long. $4\frac{1}{2}$–5 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

The shape of the head and femora and the small eyes separate this species from all the other *Stereodermi*; it is, however, to some extent connected with the more ordinary forms of the genus by *S. nigriceps*. The head and rostrum are highly polished, and both are elongate; the small eyes are quite remote from the vertex. The thorax is much narrowed in front, almost impunctate. The third interval of the elytra is narrow and shining; the outer parts are formed as in *S. nigriceps*, but the punctures are larger. The tibial excision is very large. The underside of the head is polished, but there is a large patch of velvet-like surface at the base, and on each side this is continued forwards to the pterygium by a series of fine setæ. The slender base of the femora is very marked in the case of the hind legs. The metasternum is sulcate, the abdominal depression large.

Five specimens.

STEREOBATES, gen. nov.

Antennæ mediocres; clava laxa, triarticulata. Tibiæ anteriores intus excisæ. Femora omnia extus clavata, basi tenui; tibiæ compressæ fere laminatæ; tarsi modice elongati.

The insects for which I propose this genus have in many respects the appearance of *Stereodermus*, but differ in the form of the legs, as well as in other minor characters; in sculpture they differ from *Stereodermus* by the second and third interstices of the elytra being entire, and only slightly incurved towards the sutural interval. The thorax has a peculiar depression on the disc, bounded on each side by a short carina. The eyes are very prominent; the rostrum in front of the antennæ is moderately long and slender; each joint of the club of the antennæ is slender at the base. The under surface of the body is formed very much like that of *Stereodermus*; but the legs are peculiar, the shape of the tibiæ (Tab. I. fig. 15)—laterally compressed, and with a more or less faint carina on each of the broad faces—being of itself sufficient to distinguish the genus from all the forms of *Stereodermus* I have seen.

1. **Stereobates pedator,** sp. n. (Tab. I. fig. 14.)

Rufus, opacus; rostro anterius crebre punctato, nitido; vertice fisso; pedibus elongatis et robustis.
Long. 8 millim.

Hab. Mexico, Toxpam (*Sallé*).

Antennæ with only fine, scanty, and inconspicuous setæ; each joint longer than broad, and each becoming broader from the base to near the extremity, ninth twice as long as the eighth, terminal joint distinctly longer than the ninth or tenth. Anterior part of rostrum rather closely and distinctly punctate, shining; posterior part quite dull, with a rather shallow groove along the middle, widening out greatly at the vertex, each side of the vertex produced so as to form an angular prominence. Thorax a little rounded at the sides, constricted near the front, but scarcely at all so at the base; at the sides with an obsolete sculpture formed by coarse indistinct punctures, which render the surface uneven; along the middle with a broad groove bounded on each side by a longitudinal elevation, these two carinæ shining, the surface between them dull but not sculptured. Elytra each with four equidistant carinæ, and large indistinct punctures between them; the carinæ are not joined behind, though they are there more strongly elevated, the first of the carinæ as well as the suture more conspicuous behind than the others are; each carina bears a few erect setæ, which are only conspicuous behind. Under surface shining; head and base of rostrum rather coarsely punctate-strigose; apical explanate portion of elytra large.

Two specimens. This is, on comparison, readily distinguished from the other two species of the genus by the legs being much longer than in *S. chiriquensis*, much thicker than in *S. gracilis*.

2. **Stereobates gracilis,** sp. n.

Rufus, opacus; rostro anterius nitido, indistincte punctato; vertice profunde emarginato; pedibus posterioribus gracilibus.
Long. 5½ millim.

Hab. Mexico, Toxpam (*Sallé*).

Very slender. The produced angles of the head short and somewhat depressed. Thorax not convex, slender, the surface uneven, but the punctuation is quite indistinct. Elytra with the carinæ less distinct than in *S. pedator*, and the setæ very small, even behind. Under surface shining, sculpture of the head obsolete. Abdominal impression only slight. Legs slender, the tibiæ but little compressed and dilated. Apical explanate portion of elytra very slight.

One specimen. Although very closely allied to *S. pedator*, I feel convinced this will prove to be a distinct species, and not the other sex thereof.

3. **Stereobates chiriquensis,** sp. n. (Tab. I. fig. 15, front tibia and tarsus.)

Rufus, opacus, breviter parceque hispidus; rostro ante antennas crebre punctulato; vertice profunde emarginato; pedibus posterioribus robustis, minus elongatis.

Long. 7 millim.

Hab. Panama, Bugaba (*Champion*).

Very closely allied to the other two species of the genus, but doubtless quite distinct. The depression on the vertex indistinct, quite dull. Eyes more convex. Thorax with coarse obsolete sculpture on the lateral parts. Carinæ of elytra feeble, but with fine erect distant setæ, particularly well developed on the humeral carina. Legs with the tibiæ largely compressed-dilated, and armed with numerous very short stiff setæ Metasternum and abdomen with very short, but conspicuous, depressed flavescent setæ

One specimen.

HOMŒOLIZUS, gen. nov.

Corpus gracile, setis erectis armatum. Antennæ elongatæ; clava valde elongata, triarticulata. Pedes elongati, graciles; tibiis anterioribus intus excisis; tarsis omnibus gracilibus, articulo basali posteriorum maxime elongato.

The remarkable species for which I have established this genus should be placed near *Stereodermus* and *Cerobates*, though in its elongate slender antennæ it resembles *Ionthocerus*, having, however, joints 9–11 abruptly longer than those preceding it. The elongate antennæ and legs, the slender tibiæ, and the extremely long basal joint of the tarsi distinguish the genus from *Stereobates*, next which it should be placed.

The antennæ are inserted in the middle of the rostrum, which is about as long as the thorax; the latter is convex, with the base depressed, the middle sulcate, and feebly bicarinate. The breast and the basal ventral segments are elongate and not sulcate. The legs are unusually elongate and slender, the hind pair being remarkably so. The hind coxæ are less widely separated than they are in *Stereodermus*, but not so approximate as they are in *Trachelizus*.

1. **Homœolizus salvini,** sp. n. (Tab. I. fig. 16.)

Gracilis, setis erectis undique armatus, opacus, fusco-niger; elytris fulvo-variegatis; antennis rufo-obscuris; pedibus variegatis.

Long. 6–10 millim.

Hab. Panama, Bugaba (*Champion*).

Antennæ elongate; club long, its joints scarcely broader than those preceding, each of them several times longer than broad, terminal joint very long; the erect setæ very conspicuous. Rostrum moderately long, shining in front, quite opaque behind, and only obsoletely sculptured, convex between the eyes, which are moderately large. Vertex not impressed, and only feebly emarginate behind. Thorax elongate, dull, not

punctured, with two raised carinæ and a depressed space between them on the disc. Elytra elongate, dull, black, with large dull orange-coloured or tawny marks, not punctate, depressed along the suture, the depression with elongate carinæ (the second and third intervals of *Stereodermus*), the fourth interval obsolete, the fifth carinate, and in the middle incurved towards the suture. Legs slender, front tibiæ with a large process internally overhanging the ciliate excision. Peduncle of hind femora very long and slender. Under surface shining, breast and base of abdomen prominent.

Mr. Champion procured a series of about two dozen examples of this elegant insect. It varies a good deal in size; there is but slight difference between the sexes: in the male the antennæ are inserted rather farther from the eyes than they are in the female; the former sex is apparently frequently of larger stature.

Group **TRACHELIZINA.**

HEPHEBOCERUS.

Hephebocerus, Schönherr, Gen. Curc. v. p. 501 (1840).

This genus consists of three South-American species. It was placed by Lacordaire in a tribe—Hephebocerides—distinct from the Trachelizides, but it is connected in the most intimate manner with *Trachelizus* by means of some of the forms found in our region.

1. **Hephebocerus mexicanus,** sp. n. (Tab. I. fig. 17.)

Rufo-castaneus, politus; oculis magnis, spatio verticis inter oculos subcarinato, sat lato; antennis pedibusque gracilibus; elytris obsoletissime seriatim punctatis.

Long. $7\frac{1}{2}$ millim.

Hab. Mexico, Motzorongo (*Flohr*), Cerro de Plumas (*Höge*); Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui (*Champion*).

Antennæ very long, pubescent, ninth joint not differing in form, sculpture, or pubescence from those preceding it, except that it is distinctly longer; eleventh joint very long, somewhat swollen just before the middle, giving rise to a vague appearance of a division into two joints. Rostrum slender, as long as the thorax, very polished; eyes large, convex, separated by a rather narrow space, which is somewhat raised; there is no median fovea behind, though the frontal elevation does not extend quite to the nuchal constriction. Thorax elongate, feebly constricted near the front, very shining; punctuation scarcely visible and very scanty. Elytra very shining, with obsolete punctures. Under surface very shining; metasternum not sulcate, with a small deep fovea close to the apex, a minute space just behind the fovea minutely striate.

Only one specimen was obtained in each locality. The species is very closely allied to the Brazilian *H. nanus*, but has the eyes more widely separated, and the explanate

apical portions of the elytra less produced. The basal abdominal segments are sulcate in the Brazilian species, but are not so in *H. mexicanus*.

TRACHELIZUS.

Trachelizus, Schönherr, Gen. Curc. v. p. 489 (1840); Lacordaire, Gen. Col. vii. p. 419; Senna, Bull. Soc. Ent. Ital. xxv. p. 316.

This genus has a wide distribution outside of America as well as in the New World. About twenty-four species have been described hitherto, but the species are no doubt very numerous. Several have recently been added by Dr. Senna, who has also diminished the genus by the establishment of *Microtrachelizus* for certain of its species.

§ 1. *Thorax not sulcate along the middle.* (Species 1–6.)

1. **Trachelizus advena,** sp. n. (Tab. I. fig. 18.)

Gracilis, rufus, politus; antennis elongatis, clava tenui, elongata, laxe articulata, impunctata; vertice profunde impresso.

Long. 4–6 millim.

Hab. Panama, Caldera 1200 feet, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Antennæ slender, the three terminal joints forming a very long, slender, and indistinct club, the joints of which are dull in distinction from the immediately preceding joints, which are shining. Rostrum not quite so long as the thorax. Thorax slender, very shining, not constricted in front, almost impunctate, with a very fine, indistinct channel in the middle at the base. Elytra polished, with only extremely indistinct traces of punctuation. The eyes are rather large and prominent, but on the under surface of the head they leave a broad interocular space, on which there are placed four large punctures or foveæ, having between them a remarkably convex interstice; in front of these large punctures a few fine punctures extend forwards along each side of the rostrum, the middle space being very finely carinate. Metasternum moderately long, not sulcate; in the middle before the apex with two extremely minute carinules, and behind these with a fine, short channel. Ventral segments not in the least sulcate. Apices of elytra not at all explanate.

This and the following species have the appearance of belonging to the genus *Hephebocerus*, and do really connect that genus in a very intimate manner with *Trachelizus*. *T. advena*, notwithstanding its elongate slender antennæ, has a distinct and true antennal club, and I therefore refer it to *Trachelizus*. We have received ten specimens, most of them mutilated; although they vary a good deal in size, I can detect no sexual differences.

2. **Trachelizus oscillator,** sp. n. (Tab. I. fig. 19, head, rostrum, and antenna.)

Rufo-castaneus, politus; antennis crassiusculis, evidenter clavatis; elytris obsoletissime seriatim punctatis.

Long. 7 millim.

Hab. Mexico, Cordova (*Sallé*).

We have received only two females of this species. It has quite the facies of *Hephebocerus*, but the antennæ are of the ordinary *Trachelizus*-type. This latter character distinguishes the species from *T. advena*, to which it is otherwise in appearance extremely similar. On the under surface of the head a series of coarse punctures extends from the back as far forwards on each side as the pterygia; on the metasternum there is a minute round fovea in the middle close to the hinder edge; the apices of the elytra are narrowly explanate. On the upper surface the eyes are convex and large; the interocular space is formed as in *Hephebocerus mexicanus*, that is to say, it is subcarinate in the middle, but has no angular depression on the vertex. The constriction of the thorax near the front is very vague; there is no thoracic channel. The elytra are very highly polished, but distant series of very fine punctures can be distinctly seen.

The species might be described as a *Hephebocerus* bearing the antennæ of a *Stereodermus*.

3. **Trachelizus dispar,** sp. n. (Tab. I. figg. 20, ♂; 20 *a*, under surface of head and rostrum; 20 *b*, profile of ditto.)

Rufus, nitidus, politus; elytris pone medium nigro-maculatis; capite subtus ad basin utrinque foveis duabus, ab intervallo nitido separatis, supra utrinque fovea ad marginem anteriorem oculi sita.

Long. 4–10 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

This species is readily enough distinguished from its allies, which on superficial examination resemble it extremely, by the pubescent or glandular foveæ close to the eye: on the under surface there are four of these, two on each side, viz. a round one placed just in front of the constriction separating the head from the neck, the second one being elongate and placed in front of the other, from which it is separated by a very distinct convex interstice; besides these inferior foveæ, there are two other foveæ on each side touching the margin of the eye, the upper of them being quite visible at the side of the upper surface.

The male is distinguished from the female by the structure of the anterior part of the rostrum, and by the abdomen being faintly impressed at the base, and furnished round the depression with a few erect setæ, its apical segment possessing a smooth space along the middle and some closely placed yellow setæ at the sides, the hind margin very densely punctate. The inner of the two small spurs seen at the apex of the hind tibia of the female is replaced in the male by a large mucro directed inwards.

The series procured amounts to about thirty individuals, the females being in the proportion of about three to two.

4. **Trachelizus lineatus,** sp. n. (Tab. I. fig. 21, under surface of head, ♂.)

T. dispari simillimus; statura, præsertim in thorace, paulo breviore: rufus, politus, elytris pone medium nigro-maculatis; capite subtus utrinque linea pubescentiæ glandularis munito, intervallo longitudinali sat lato, polito.

Long. 4–11 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

This insect is excessively similar to *T. dispar*, but, together with the following two species, is readily separated by the fact that the two foveæ on the underside of the head are replaced by a line of white velvet-like matter, from which spring the few fine serial setæ. The male of *T. lineatus* is readily distinguished from all the others of the genus by the very broad, highly polished space on the last ventral plate; this space is impressed, and, in consequence, is limited in a remarkably definite manner from the punctate sides, which bear very little pubescence; the polished space becomes broader as it approaches the hind margin.

The rostrum in the male of this species is short and robust, its apical part being much shorter than the corresponding part of the female. Fourteen specimens.

5. **Trachelizus cognatus,** sp. n.

T. lineati simillimus: gracilis, rufus, politus, elytris pone medium nigro-maculatis; capite subtus utrinque linea pubescentiæ glandularis munito, intervallo longitudinali sat lato, polito.

Long. 4–10 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

This insect is distinguished from *T. lineatus*, in the male sex, by the longer rostrum and the less definite structure of the middle of the last ventral plate. The females of the two species I can only distinguish by placing the more slender as *T. cognatus*, the others as *T. lineatus*. The greater elongation of the male rostrum causes this sex to look like the females of *T. lineatus* and *T. dispar*, and thus greatly adds to the difficulty of separating these puzzling species by superficial examination.

The structure of the last ventral plate differs from that of *T. lineatus* in that the median polished space is less broad and less definitely separated from the lateral portions. Eighteen specimens.

6. **Trachelizus elevatus,** sp. n. (Tab. I. fig. 22, under surface of head.)

T. lineati simillimus: rufus, politus, elytris pone medium nigro-maculatis; capite subtus utrinque linea pubescentiæ glandularis munito; linea hac posterius in duas evidentius divisa, intervallo longitudinali posterius magis elevato, convexo, margine posteriore libero pubescentia glandulari munito.

Long. 4–11½ millim.

Hab. GUATEMALA, Izabal (*Sallé*); PANAMA, Volcan de Chiriqui (*Champion*).

This species differs from *T. lineatus* and *T. cognatus* in having the shining interval between the rows of glandular pubescence on the underside of the head broader and

more elevated behind, and the interval itself set with the peculiar white substance I have called glandular pubescence. The two basal ventral segments are more prominent than they are in the allied species. The structure of the terminal ventral plate of the male is much like that of *T. dispar*, but the area of dense punctuation at the hind margin is broader. The mucro at the apex of the hind tibia is long and conspicuous.

Thirteen specimens. The variation in size is even greater than it is in the allied species.

The characters I have given to distinguish the preceding four species are drawn chiefly from the under surface of the body. These species, however, may be distinguished from above by attention to the superior orbital fovea: this is large in *T. dispar*, and is entirely absent in *T. elevatus*; in *T. lineatus* and *T. cognatus* the fovea is present though small. The males of *T. lineatus* and *T. cognatus* may be readily distinguished by the difference in their rostrums, but the females appear to me scarcely distinguishable. Each of the four species varies enormously in the size of the individual, hence no attention must be paid to this in determining them.

§ 2. *Thorax deeply sulcate along the middle, either on the basal part or for nearly all the length.* (Species 7–23.)

A. *Prosternum of male without fovea in the middle.* (Species 7–20.)

7. **Trachelizus hirtellus,** sp. n.

Rufo-castaneus, nitidus, haud deplanatus, setis tenuibus erectis parce armatus; prothorace dorso distanter subtiliusque punctulato, basi canalicula arguta, angusta, per dimidiam longitudinis ducta; elytris seriatim remote punctatis.

Long. $4\frac{1}{4}$–12 millim.

Hab. NICARAGUA (*Sallé*), Chontales (*Belt, Janson*); PANAMA, Volcan de Chiriqui (*Champion*).

This species has the general form of *T. dispar* and its allies. The eyes are very prominent, the angular depression between them very distinct. The thorax is rounded at the sides and greatly narrowed in front; it is very shining, but bears at the sides some rather large setigerous punctures. The elytra bear distant series of rather large but indefinite punctures, from each of which there rises a fine erect hair; the interstices at the apical declivity are distinctly convex. There is a great difference in the form of the rostrum in the two sexes, that of the male being very broad in front. Beneath there are two series of punctures extending as far as the pterygia; the basal punctures of these series are not deep. The male has an impression on the basal ventral segment; both sexes have the metasternum impressed, but the impression in the male is more or less vague and broad.

Fifteen specimens. The variation in size is very great, but I cannot find any specific

characters to distinguish the large from the small individuals. The metasternal depression of the male seems to vary in its development.

T. aureopilosus, Senna, from Fonteboa, is no doubt allied to *T. hirtellus*, but apparently has a different sculpture on the elytra.

8. **Trachelizus seriatus,** sp. n.

Testaceo-castaneus, politus; elytris parce subtiliter punctatis, setis erectis seriatis; vertice fovea ovali minus profunda, posterius haud aperta.

Long. $6\frac{1}{2}$ millim.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

Rostrum without any channel. Vertex with a rather elongate depression, which has no appearance of being open behind and is not prolonged as a channel in front. Thorax elongate, polished, quite impunctate above, with a broad sulcus prolonged to very near the front margin. Elytra with series of small, subobsolete punctures, from each of which proceeds a fine erect seta. Underside of rostrum with a series of punctures on each side separated by a shining carina; at the base there is a narrow, angular, velvety space. Male with the metasternum sulcate, the base of the venter with a large impression; the terminal plate very densely, scabrously punctate, the extreme apices of the elytral margins distinctly dilated and flat.

We have received only one example of this distinct species; it is probably an individual of unusually small size, as the nearest allies are much larger insects.

9. **Trachelizus serratus,** sp. n. (Tab. I. fig. 23, underside of head and rostrum, ♀.)

Castaneus, thoracis lateribus elytrisque setis erectis; his punctis seriatis sat distinctis, sutura subcrenata, apice communiter emarginato.

Long. 11 millim.

Hab. Mexico, Cerro de Plumas (*Höge*).

Of this species we have received three examples. Although they are all of the female sex, and are allied to *T. seriatus* (of which we know only the male sex), it is clear that they belong to a distinct species. The vertex has a deep and broad impression; this is not open behind, but is triangular in shape and does not form a channel in front. The thorax has a broad groove, which is continued to very near the front margin; the sides are very distinctly punctured and setose, the disc quite shining. The elytra are less polished and shining than in the allied species; the basal parts are indeed somewhat rugulose, though only very obsoletely so; the series of punctures that bear the erect rather long setæ are moderately distinct; the suture is somewhat irregular or crenate along the line of its summit. On the underside of the head there is an elongate velvety surface, angular in form; the middle is strongly carinate; on each side of the carina there is a series of coarse setigerous punctures extending as far as the front of

the pterygia; anterior to this the series is continued forwards as very closely-placed fine punctures, the intervals between which when examined in half-profile are seen to form minute angular prominences, so that there is a fine saw on each side of the under surface of the rostrum (Tab. I. fig. 23). The apices of the elytra form a definite common emargination which in outline is feebly bisinuate; each tip has a minute portion cut away from the inner face of its most prolonged part, so as to form a very shallow impression there.

10. **Trachelizus frontalis,** sp. n.

Rufo-niger, politus, thoracis lateribus elytrisque setis erectis, his punctis seriatis minus subtilibus sat remotis; vertice profunde angulariter foveato, fovea antice in canalicula ducta.

Long. 8 millim.

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Volcan de Chiriqui (*Champion*).

We have received only two females of this species. Though in general appearance it closely resembles *T. sternalis*, it is distinguished by such good characters that I have no doubt it will be recognized with ease. These characters are the setose surface, the absence of the sternal foveæ, and the presence of a saw-like arrangement of the intervals of the lateral punctures of the prorostrum. The impression on the vertex is open behind, and is prolonged in front to form a channel; between the points of insertion of the antennæ there is no channel. The very broad channel on the thorax extends very nearly to the front margin; the setæ are quite visible from above, though the disc is very polished and free from setæ. The serial punctuation on the elytra is quite distinct, and a seta is seen to spring from each puncture. The margins of the elytral apices are quite simple. The sculpture of the sides of the rostrum is continued forwards beyond the pterygia as a beautifully perfect series of punctures, after the fashion of *T. serratus*.

11. **Trachelizus sternalis,** sp. n.

Rufo-niger, politus, elytris subtilissime (vix perspicue) seriatim punctatis; vertice profunde angulariter impresso, impressione posterius haud occlusa, anterius haud in canalicula prolongata; prothorace sulco anterius abbreviato; prosterno utrinque mox ante coxam profunde foveolato.

Long. 6–10 millim.

Hab. MEXICO, Cerro de Plumas (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*); GUATEMALA, Zapote, San Gerónimo (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Volcan de Chiriqui, Caldera (*Champion*).

Antennæ red, thick; joints 3–8 transverse, ninth and tenth quadrate, eleventh acuminate. Rostrum moderately depressed between the points of insertion of the antennæ. Thorax with a broad channel, which is abbreviated at some distance from the front; very smooth and shining, without trace of transverse constriction. Elytra rather short. Head beneath without velvety area; the metarostrum carinate along the middle, the carina between the eyes dilated in a cruciform manner; in front of the transverse branch

of the cross there is on each side a fine channel formed by a few coalescent punctures, filled with white velvet-like matter; this channel only extends as far as the base of the pterygia. Prosternum in front of the coxa with a deep large fovea, behind the coxa with a few stiff erect setæ. Metasternum sulcate in each sex; male with a moderately large impression at the base of the abdomen. Apical ventral segment very coarsely punctate, similar in the two sexes; tips of the elytral margins quite simple.

Seventeen specimens.

12. **Trachelizus nigricornis,** sp. n.

Politus, niger, supra corpore medio longitudinaliter rufescente; prothorace crebrius subtiliusque punctato, lateribus parce setigeris; elytris rufis, nigro-vittatis, externe seriebus punctorum distinctorum, seriebus internis obsoletis.
Long. 10–11 millim.

Hab. GUATEMALA, Zapote, Volcan de Atitlan 2500 to 3000 feet, Cerro Zunil (*Champion*).

The surface is very polished, black, with the back of the head and the thorax towards the front vaguely rufescent; the elytra with a broad rufescent stripe adjacent to the black suture. Vertex with a very deep elongate fovea, not open behind. Thorax shining, very finely punctulate, the punctures more distinct in front, and the sides in front with a few outstanding setæ; the median groove very broad, and extending close to the front margin. Elytra with the suture black, and a broad black stripe extending from the shoulder to the subapical callosity; near the suture the series of punctures are obsolete, but on the outer parts they are quite distinct. On the under surface a series of numerous punctures extends from the base of the head to anterior to the pterygia, and is very beautifully developed and regular in the female; the carina separating the two series becomes broad on the head, and is there opaque. The metasternum is only feebly impressed, the abdomen not impressed in either sex; each apical margin of the elytra is very slightly incrassate.

One male and two females.

Several of the following species are similar in colour and appearance to *T. nigricornis*, but it is the only one of this set that has outstanding setæ on the sides of the prothorax.

13. **Trachelizus robustus,** sp. n.

Politus, rufo-niger; elytris vage rufis, nigro-vittatis, fere impunctatis.
Long. 14–16 millim.

Hab. BRITISH HONDURAS, Belize (*Blancaneaux*); NICARAGUA, Chontales (*Belt*); PANAMA, David (*Champion*).

This species is distinguished amongst its allies by the very obsolete punctuation of the elytra. The male is peculiar, inasmuch as it has, on each side of the highly

polished thorax, a large spot where the surface is rendered opaque by a minute dense strigosity. Rostrum very highly polished. Fovea of the vertex closed behind, not at all prolonged in front. Thorax very highly polished, impunctate; median groove very broad, and extending to near the front margin. Elytra with the external series of punctures very fine, and the series near the suture almost invisible. Head beneath with an elongate velvety space; the lateral series of punctures almost the same as in *T. nigricornis*. Prosternum with a band of opacity on the front; metasternum sulcate; abdomen feebly sulcate at the base in the male, but unimpressed in the female. Tips of the elytra in the male flat and thick; apical ventral segment densely punctate, and covered at the tip with fine short flavescent pubescence.

One specimen from each of the three localities. Besides the characters mentioned above, this species is distinguished from most of its allies by the shorter more indefinite club of the antennæ. In this respect, as well as in the male-characters, it makes a distinct approach to *T. fracticornis*.

14. **Trachelizus occlusus,** sp. n.

Elongatus, supra planatus, rufo-niger; elytris rufis, late nigro-vittatis; vertice fovea profunda sat elongata, posterius haud aperta; elytris fortiter seriatim punctatis, interstitiis haud convexis.

Long. 14–15 millim.

Hab. Mexico, Catemaco in Vera Cruz (*Sallé*), Las Vigas (*Höge*).

Antennæ very thick, piceous. The fovea on the vertex not much prolonged forwards, and not extending as a channel along the rostrum, the metarostrum therefore quite ecanaliculate above, the prorostrum deeply impressed. Thorax with a scanty fine punctuation, the median groove broad and extending very near to the front. Elytra with series of punctures everywhere large, the interstices rather broad but not elevated; at the extreme base the series of punctures are more deeply impressed, and thus the interstices there are subcarinate. On the under surface the opaque space is broad and elongate, so as to obscure the lateral series of punctures to near the base of the pterygia; the series are short, and are continued little or not at all beyond the pterygia; the prosternum has some fine erect setæ; near the front the surface has an opaque band; the flanks are dull, but not punctate. Metasternum feebly sulcate. Abdominal segments in the male with two very indistinct depressions; terminal ventral plate of male at the apex with only a very small space more finely punctate; tips of the elytral margins much dilated, flat, each bearing a distinct cavity.

We have received only three specimens of this insect. Though very close to *T. turgidirostris*, I think it is distinct therefrom; the individuals are larger, and may be readily distinguished by the less elongate vertical fovea, and by the complete absence of any channel on the upper surface of the metarostrum. In the male of this species joints 3–8 of the antennæ have their inner under surface more densely set with longer setæ.

15. **Trachelizus turgidirostris.**

Trachelizus turgidirostris, Boh. in Schönh. Gen. Curc. v. p. 493 [1].

Hab. Mexico [1], Toxpam, Catemaco (*Sallé*), Atoyac in Vera Cruz (*H. H. Smith*); Guatemala, Teleman and San Juan in Vera Paz, Zapote, El Tumbador (*Champion*); Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui (*Champion*).

Though so widely distributed in our region, this appears to be a rare insect, as we have received only twenty-three examples. It exhibits considerable variety in size and punctuation. Usually it may be known by the existence of some large but not deep punctures on the flanks of the prothorax near the base. The depression on the vertex is very elongate, angular in front, but more or less regularly prolonged as a channel on the metarostrum. The apices of the elytra of the male, seen beneath, are not explanate. The punctures of the elytra are distinct but remote, so that the interstices are not at all elevated.

Boheman's description [1] accords better with this species than with any of the others, and Sallé's collection contained specimens labelled with this name. The description of the Swedish naturalist was apparently made from a single female in Chevrolat's collection, and is far from characteristic.

16. **Trachelizus fracticornis,** sp. n. (Tab. I. fig. 24, ♂.)

Rufo-niger, nitidus; rostro basi profunde argute sulcato; prothorace sulcato, anterius obsolete transversim impresso; elytris seriatim fortiter punctatis.

Long. 9–14 millim.

Hab. Mexico, Cordova (*Sallé*); British Honduras, Belize (*Blancaneaux*); Guatemala, Las Mercedes, Cerro Zunil (*Champion*); Nicaragua, Chontales (*Belt, Janson*); Panama, Volcan de Chiriqui (*Champion*).

This is one of the most distinct species of the group, with the elytra more or less indistinctly striped with red and black; the club of the antennæ is not so well marked as usual, the ninth and tenth joints being short and bead-like, and the terminal joint not long; the basal joint, on the other hand, is remarkably elongate, especially in the male, and the antennæ are geniculate, somewhat as in the Curculionidæ proper. The very broad thoracic groove is limited in front by an obsolete transverse impression, placed a considerable distance from the front margin. The elytra have a broad groove next the suture; the first series of punctures is placed in this groove, and therefore concealed; the second series consists of very large punctures, but near the apical portion the punctures of this series are small; the third series consists of quite small punctures, and so forms a remarkable contrast to those adjoining it. On the under surface the whole of the head and prorostrum are dull, so that the serial punctures can only be detected by the position of their setæ. In the male the last ventral plate is furnished with two contiguous tufts of yellow long pubescence; the apex of each elytron is a

little produced, so that a narrow angular space is left between them; the terminal angle is incurved.

Nineteen specimens.

17. **Trachelizus arduus,** sp. n.

Elongatus, rufescens, sutura nigra, prothoracis plagis elongatis elytrorumque vitta versus latera nigricantibus; prothorace subtiliter punctulato, nitido, sulco mediano fere integro; elytris fortiter punctato-sulcatis, seriei secundæ punctatura subdiscreta.

Long. 8–10 millim.

Hab. GUATEMALA, Sabo and San Gerónimo in Vera Paz, Capetillo (*Champion*).

We have received four individuals of this species, and I had at first considered them as merely varieties of *T. filiformis.* Though they do not agree exactly, they nevertheless differ in certain respects in a common manner from the Mexican species, and I therefore treat them as distinct. In *T. arduus* the punctures of the second series on the elytra—that is, the first series of actual punctures, the sutural groove being reckoned as the first series—are almost as distinct as those of the more outer series, while in *T. filiformis* this series of punctures is more indefinite, owing, it would appear, to the interstice that separates the series from the sutural groove being less elevated. *T. arduus* has a less elongate thorax, with the punctuation finer and more scanty, and the fovea of the vertex is not distinctly prolonged as a groove on the metarostrum. The legs, too, are shorter and thicker.

This species is to a certain extent intermediate between *T. turgidirostris* and *T. filiformis.*

18. **Trachelizus filiformis,** sp. n.

Elongatus, angustus, rufescens, sutura nigricante; prothorace minus subtiliter punctato, sulco mediano fere integro; elytris fortiter punctato-sulcatis, interstitiis angustis.

Long. 8–12 millim.

Hab. MEXICO, Cerro de Plumas, Bobo (*Höge*).

This insect is readily distinguished from all the forms of *T. turgidirostris* by the coarse dense sculpture of the elytra, the punctures in each series being so closely placed that each is separated from the one before and behind it only by a short somewhat indistinct interval; the channel on the thorax is unusually elongate, reaching very near indeed to the front margin. The impression on the vertex is continued as a groove along the metarostrum. The thorax is elongate, rufescent, in some cases piceous in two or three places, and the sides are somewhat coarsely, the upper surface more finely punctate. The interstices between the series of large punctures on the elytra are quite narrow, and are somewhat raised. On the under surface the head and metarostrum are entirely dull, and the serial sculpture is not continued beyond the pterygia; the prosternum is almost entirely dull. The punctuation on the breast is rather more distinct than usual.

The male has the base of the abdomen feebly sulcate, the apical edges of the elytra a little dilated, and each bearing an impression.

Höge procured sixteen specimens of this species, three only being males.

19. **Trachelizus geminatus,** sp. n.

Angustus, elongatus, rufo-ferrugineus, nitidus, sutura nigricante; prothorace subtiliter punctulato, sulco mediano fere integro, lateribus anterius subimpressis ibidemque setis erectis munitis; elytris fortiter punctato-sulcatis, seriei secundæ punctatura omnino indiscreta.

Long. 10 millim.

Hab. MEXICO, Cerro de Plumas (*Höge*).

Although we have received only a single example of the male sex of this species, and it is exceedingly similar to *T. filiformis*, I have no doubt it is distinct therefrom, and may be readily enough distinguished by the fact that next the suture the second groove is almost as destitute of punctuation as the first. The depression on the vertex is elongate-oval, not open behind, and not at all prolonged as a groove on to the meta-rostrum; the prorostrum is deeply sulcate. The club of the antenna is elongate. The setæ on each side of the thorax in front stand out so as to be visible from above. The narrow interstices between the series of punctures on the elytra are a good deal raised. Beneath, the larger part of the prosternum is shining, the metasternum finely sulcate, the basal abdominal segments with an uninterrupted depression extending their whole length. The lower face of the tips of the elytral margins are deplanate and impressed.

20. **Trachelizus optatus,** sp. n.

Angustus, dilute rufus, nitidus; prothorace parce, obsolete punctato, sulco mediano fere integro; elytris seriatim fortiter punctatis, interstitiis haud elevatis.

Long. $7\frac{1}{2}$ millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

The only individual we have received of this species resembles, except in the punctuation of the elytra, a small example of *T. arduus*; it is, however, distinguished by the fact that the serial punctures on the under surface of the head and rostrum do not cease at the pterygia, but are prolonged in front thereof to form an elongate, very fine groove, from which project numerous, very minute and short, sharp, stiff setæ, these forming a sort of minute saw. In this last-mentioned character *T. optatus* is allied to *T. serratus*, the two species having, however, no resemblance in general appearance. The impression on the vertex is elongate, not open behind. The thorax is narrow, dull at the sides, indistinctly, sparingly punctulate, the median sulcus attaining almost the front margin. The elytra have numerous series of large punctures separated only by somewhat narrow intervals. The prosternum is dull; the meta-sternum feebly sulcate. So far as the female is concerned, the species cannot be confounded with any of the varieties of *T. turgidirostris*, because in that species there is no trace whatever of lateral grooves on the prorostrum.

B. *Prosternum of male with a minute fovea in the middle of the anterior part.*
(Species 21–23.)

21. **Trachelizus laticollis,** sp. n.

Brunneus, sat nitidus, supra subplanatus; thorace fortiter punctato; elytris pone medium nigro-bimaculatis, seriatim regulariter punctatis, summa basi regulosis.
Long. 13 millim.

Hab. GUATEMALA, Teleman in Vera Paz (*Champion*).

Antennæ rather elongate; club elongate, but scarcely at all broader than the preceding joints. Impression on the vertex very elongate, not limited in front, but prolonged forwards beyond the eyes; prorostrum deeply and broadly sulcate. Thorax large, the anterior part closely punctured even in the middle, the sides of this part with some vague wrinkles, the posterior of which causes the thorax to appear subconstricted near the front; the median channel extends very near to the front margin, but its anterior part is subobsolete; the sides and upper part of the thorax rather coarsely punctured. Elytra elongate, with very regular series of deep punctures. Serial punctures of the underside of the head and rostrum distinct, separated, not by a carina, but a broad interval, which, though dull on its broad part, does not appear velvety. Prosternum shining, in the middle (in the male) with a minute fovea. Breast and abdomen almost unsulcate. Apices of elytra simple.

Only one example was obtained of this insect; it is unfortunately much mutilated, but is, I think, distinct from the following, which, however, it greatly resembles.

22. **Trachelizus ducalis,** sp. n. (Tab. I. fig. 25.)

Rufo-brunneus, nitidus, supra subplanatus; thorace elongato, anterius regulariter angustato, ad marginem anteriorem densius punctato; elytris pone medium nigro-notatis, regulariter seriatim fortiter punctatis.
Long. 16 millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

This fine Brenthid is remarkable by the extreme elongation of the impression on the vertex, which, becoming gradually narrower, is prolonged on to the rostrum, disappearing almost entirely halfway between the eyes and the antennæ. The prorostrum is very deeply and broadly sulcate. The thorax is much narrowed in front, and very distinctly punctate. The elytra have quite regular series of very large punctures, the intervals being flat. The characters of the under surface are those of *T. laticollis*, except that the under surface of the head is even less dull.

One example.

23. **Trachelizus prolixus,** sp. n. (Tab. I. figg. 26, ♂; 26 *a*, head and rostrum, ♀.)

Subcylindricus, elongatus, ferrugineus, nitidus, elytris pone medium nigro-notatis; prothorace crebre punctato, elongato; elytris seriatim fortiter punctatis.
Long. 8–16 millim.

Hab. Mexico, Cuernavaca (*Sallé*), Cerro de Plumas (*Höge*); British Honduras, Belize (*Blancaneaux*); Guatemala, Cerro Zunil (*Champion*); Nicaragua, Chontales (*Belt*).

The subcylindrical form of this and the following species readily distinguishes them from *T. ducalis*, to which, however, they appear to be so closely allied in most other respects that it is scarcely necessary to repeat the description. In the female the prorostrum is much longer than the metarostrum; the serial sculpture is not continued beyond the pterygia.

Seven specimens. The individual from Belize is a female, and differs from the other individuals of that sex in the metasternum not being sulcate, but possessing only an elongate fovea at the apex.

VASSELETIA, gen. nov.

Antennæ breves, vix clavatæ. Caput posterius parum constrictum, oculis ad basin sitis. Abdomen segmentis primo et secundo brevibus, a sutura profunda divisis.

The *Trachelizus vasseleti* of Boheman differs totally in appearance from the other species of the genus, and is distinguished by the possession of a character of extreme rarity in Brenthidæ, the first and second abdominal segments being divided by a suture as deep as are those of the following segments. I therefore separate it as a distinct genus. The facies is that of *Hormocerus*, a genus which, in the male, possesses a stridulating-organ on the propygidium. I am not able to ascertain whether this structure also exists in *Vasseletia*.

1. **Vasseletia vasseleti.** (Tab. II. fig. 1, ♂.)

Trachelizus vasseleti, Boh. in Schönh. Gen. Curc. v. p. 498[1].

Hab. Mexico[1] (*Sallé*).

I have seen of this remarkable little Brenthid only the two individuals from Sallé's collection, labelled "type." We have no other Brenthid of this facies, and I shall not be surprised if it prove to be recorded as Mexican in error.

Group **AMORPHOCEPHALINA.**

This group has been proposed by Power (Ann. Soc. Ent. Fr. 1878, p. 478) since the publication of Lacordaire's classification of the Brenthidæ. Although far from satisfactory as regards the association of *Eupsalis* with *Amorphocephalus*, yet I here make use of it in order to separate two very difficult genera from the Arrhenodina. Our genus *Hemipsalis* may be placed in Amorphocephalina, on account of being allied to *Eupsalis*; and I also place temporarily in the group another new genus, which bears a great superficial resemblance to *Hemipsalis*; great difficulty exists, however, in classifying this genus in the system at present in vogue.

CACOPSALIS, gen. nov.

Rostrum in utroque sexu parum dissimile, breve; caput sat elongatum, posterius haud constrictum, collo lato, capite latiore. Abdomen segmentis basalibus parum elongatis.

The extremely interesting insect which forms this genus is similar in appearance to the North-American species of *Eupsalis*, but differs in the structure of the head and the insertion of the antennæ, so that the two genera, notwithstanding the great superficial resemblance, cannot be considered as closely allied. We appear, indeed, in this case, to have a remarkably primitive form of Brenthid, resembling in details of colour, sculpture, and general appearance the more normal genus *Eupsalis*.

In *Cacopsalis* the structure of the rostrum is not very dissimilar in the two sexes, and is, in fact, intermediate between that of the male and the female of *Eupsalis*, where there is a strong sexual disparity. The insertion of the antennæ is also little different in the two sexes, the place being a little behind the middle. The mandibles are similar in the two sexes, approximate, rather small, very strongly toothed, the sharp apical points directed upwards. In the form of the head there is a marked distinction between the sexes, it being more elongate in the female, while in the male it is not only somewhat shorter, but is also a little constricted behind. The apical three joints of the antennæ are longer than the others, but do not form a definite club. The first and second segments of the abdomen are not distinctly divided, and are unusually short, each being only half as long as broad. The tarsi have the lobes of the third joint remarkably largely developed. The femora are dentate, and the other characters are much the same as in *Eupsalis*.

In the present very unsatisfactory condition of classification of the Brenthidæ, it is not easy to decide on a position for this genus. Lacordaire placed *Eupsalis* in his group Arrhenodides, a position that would be quite unsuitable for *Cacopsalis*. Power removed *Eupsalis* from this position (Ann. Soc. Ent. France, 1878, p. 477) and placed it in a group with *Amorphocephalus*, but *Cacopsalis* would be equally misplaced there. The genus, in fact, exhibits a peculiarity not found in either the Arrhenodina or the Amorphocephalina, inasmuch as the fovea on the underside of the head is not connected with the transverse constriction separating the head from the neck, but is placed at some distance in front thereof. This character appears to be of considerable importance in the classification of the Brenthidæ, and would bring *Cacopsalis* into the neighbourhood of the Nemocephalina, and some of the 'Brenthides vrais' of Lacordaire. There is, however, an important difference arising from the similarity of the sexes of *Cacopsalis*. In the Nemocephalina there is a great dissimilarity between the sexes in the structure of the rostrum, as a result of which, in the female, the fovea is placed at the base of the head in connection with the transverse constriction, while in the male it is much anterior thereto. In *Cacopsalis*, as already stated, there is but little difference between the sexes, and in both the fovea is placed in front of, and separated from, the transverse constriction.

1. **Cacopsalis rudis,** sp. n. (Tab. II. figg. 2, ♀; 2*a*, head and rostrum, ♂.)

Robustus, convexus, niger, nitidus; elytris flavo-signatis, profunde striatis.
Long. 17–21 millim.

Hab. Mexico, Toxpam (*Sallé*); Honduras (*Mus. Brit.*).

Vertex punctate-strigose, more coarsely in the female than in the male. Metarostrum sulcate: in the female the groove stops at the pterygia, and the prorostrum is almost cylindrical, rather thick, closely punctulate; in the male the prorostrum is flat above and granulate, the groove is continued forwards, and in front of the pterygia its sides diverge so as to form a sort of raised margin very near to each side of the rostrum. Thorax broad, much narrowed in front, without a median groove, impunctate; in the male shining, in the female duller and with the anterior part somewhat uneven. Elytra deeply and regularly striate, and with conspicuous yellow marks distributed as follows:—an elongate one on the third interstice near the apex; a series of dots forming a transverse band behind the middle, one dot or short mark being placed on each of the second to seventh interstices; a short mark on the third interstice at the base, and a similar one just about the middle; on the fourth interstice an elongate mark extending from the base to near the middle, on the fifth interstice a dot at the base, on the eighth a dot before the middle. Under surface shining, almost impunctate; male with a feeble depression on the metasternum and abdomen, and on the pygidium at the apex a large very deep fovea.

Three specimens.

There are, I believe, two males of this species in the British Museum collection under the name of "*Arrhenodes politus*, Jekel MS." One of them is labelled "Honduras," the other "Cayenne." This latter ticket does not appear to be very trustworthy.

HEMIPSALIS, gen. nov.

Rostrum in utroque sexu parum dissimile, breve; caput breve, posterius leviter constrictum, collo lato, capite latiore. Abdomen segmentis basalibus parum elongatis.

Although very similar in the structure of the rostrum and mandibles to *Cacopsalis*, this genus differs by the shorter head, faintly, though distinctly, constricted at a short distance behind the eyes, and by the fovea on the underside of the head being placed in direct connection with the transverse constriction. This genus may therefore be assigned to a position near *Eupsalis*, from which *Hemipsalis* differs in both sexes by the form of the mandibles; in the male sex by the narrower rostrum, and in the female by the antennæ inserted farther from the base of the rostrum. Except as regards the fovea on the underside of the head and the mandibles, *Hemipsalis* connects *Cacopsalis* with *Eupsalis*.

When the two sexes are compared, it is seen that there really exist well-marked differences between them as regards the form of the prorostrum and the insertion of

the antennæ, the latter being median in the male, slightly post-median in the female; the prorostrum is flatter in the male and bicarinate behind. The tarsal lobes are arge, and the femora very distinctly toothed.

1. **Hemipsalis crassus,** sp. n. (Tab. II. figg. 3, ♀; 3*a*, underside of head and rostrum, ♂; 3*b*, mandibles from in front.)

Rufus, nitidus, prothorace fusco-vittato; elytris lineis flavis perbrevibus ornatis, profunde striatis, striis subcrenatis, interstitiis convexis plus minusve obsolete transversim corrugatis.

Long. 16–18 millim.

Hab. NICARAGUA, Chontales (*Belt*).

Antennæ thick, red, in the male 6 millim. long, in the female shorter; the tenth joint scarcely so long as the ninth, and not much more than half as long as the eleventh. Prorostrum finely granulate, in the male posteriorly with two convergent carinæ. The metarostrum has on the upper surface a very large deep depression; this only extends back as far as the middle of the eyes, and is therefore widely separated from the nuchal constriction. Thorax short and broad, shining, not punctate and not canaliculate. Elytra red, each with numerous short yellow lines, six or seven of which form a transverse fascia behind the middle; the deep striæ are indefinitely punctured so as to be crenate, and the interstices are more or less wrinkled; the tips are rounded. The abdomen of the male is slightly, the breast very little, impressed; the pygidium with a large excessively deep fovea.

Two specimens.

Group **ARRHENODINA.**

EPISPHALES.

Automolus, Kirsch, Berl. ent. Zeitschr. xi. p. 218 (1867) (nec Burm.).
Episphales, Kirsch, op. cit. xiv. p. 378; Power, Pet. Nouv. Ent. ii. p. 241.
Cyriodontus, Kirsch, Berl. ent. Zeitschr. xi. p. 216.

There are in tropical America certain Brenthidæ allied to *Orychodes* and *Ectocemus* of the Old World. For one of these Kirsch proposed the name of *Episphales* (originally *Automolus*), and for another that of *Cyriodontus*. In the 'Munich Catalogue' *Episphales* is accepted as valid, but *Cyriodontus* is merged in *Arrhenodes*. This latter point is, however, incorrect, for if *Episphales* be adopted and *Cyriodontus* rejected, the latter should be associated with *Episphales* rather than with *Arrhenodes*. The best course to adopt in our present very imperfect condition of knowledge appears to be to recognize a single genus allied to *Arrhenodes*, but wanting the characteristic dilatation of the male rostrum; we may leave the subdivision of this genus to be treated when more is known of the species.

I now place in *Episphales* a considerable variety of forms, nearly all of which are

so rare that they are represented in the collections amassed by our Editors by only one or two specimens of each species. They all have the head more or less deeply constricted behind the eyes, the hind angles of the head more or less free, and the vertex in the middle more or less elevated or divided, thus increasing the apparent depth of the constriction of the neck. In this latter point the species form a strong contrast with *Arrhenodes*. They differ much among themselves in the form of the head and position of the eyes—*E. elegans* coming, in these respects, nearest to the typical species, *E. pictus*.

1. **Episphales interruptolineatus.**

Arrhenodes interruptolineatus, Gyll. in Schönh. Gen. Curc. v. p. 477 [1].
Episphales interruptolineatus, Power, Pet. Nouv. Ent. ii. p. 241 (1878) [2].

Hab. Mexico (*Chevrolat* [1]).

This insect is compared with *Eupsalis minutus* by Gyllenhal, and said to be longer and narrower. It is referred by Power [2] to *Episphales*. If this be correct we do not seem to have received an example of the species. The female only has been described. There is no insect bearing this name in the Sallé collection.

2. **Episphales lacordairei.**

Episphales lacordairei, Power, Pet. Nouv. Ent. ii. p. 241 [1].

Hab. Mexico [1] (*Mus. Brux.*).

We appear not to have received a specimen of this species, so far as it is possible to judge from the brief description.

3. **Episphales rugicollis,** sp. n. (Tab. II. fig. 5.)

Fusco-niger, supra parum nitidus, thorace densissime rugoso; elytris fortissime punctato-sulcatis, ad basin et ultra medium flavo-signatis.
Long. 25 millim.

Hab. Mexico (*Sallé*).

Of this remarkable Brenthid we have received only a single example, a male. Prorostrum slender, in general form like that of *Orychodes*, and asperate above in a similar manner; antennæ stout, rather short, the terminal joint very acuminate; metarostrum very coarsely rugose; eyes small, globular; angles of head very free. Thorax broad, dull, with a faint metallic tinge, extremely densely rugose. Elytra short and broad, next the suture with one impunctate, or nearly impunctate, groove, elsewhere with very large punctures placed very regularly, and with all the intervals between them quite small; the fourth and fifth interstices have each a small yellow mark at the base, and there is a fascia of short yellow marks beyond the middle. Beneath shining; head and metarostrum extremely coarsely rugose; base of abdomen broadly impressed.

In the National collection at South Kensington there is a specimen labelled "*Arrhenodes rugicollis*, Jekel MS."; it is probably a female of this species.

4. **Episphales optatus,** sp. n. (Tab. II. fig. 6, head and front of thorax, ♀.)

Niger, nitidus, prothorace fortiter rugoso, medio longitudinaliter lævigato et canaliculato; elytris multi-sulcatis, sulcis fortiter punctatis, interstitiis 3° 4°que flavo-lineatis.
Long. 26 millim.

Hab. Costa Rica (*Van Patten*).

This is another very fine insect, of which we have received but one specimen—a female; it is allied to *E. rugicollis*, but abundantly distinct, the pronotum being smooth along the middle, and the punctures on the elytra not so large; hence the longitudinal interstices between the rows of punctures form regular costæ, while the intervals between the punctures in each series are obsolete, so that the grooves are almost crenate rather than punctate. The under surface of the head and metarostrum is densely rugose; this character distinguishes the species from all others of the genus except *E. rugicollis*.

5. **Episphales facilis,** sp. n.

Piceus, prothorace subænescente, opaco; elytris flavo-signatis, multi-punctato-sulcatis; tibiis rufis.
Long. 17 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

♀. Head and prorostrum obscurely red, the former with a faint metallic tinge; metarostrum with a longitudinal impression; head with a similar impression on the vertex, the sides of this latter impression projecting somewhat behind. Antennæ short, dull red, stout; terminal joint nearly twice as long as the one preceding, acuminate. Thorax quite dull, with an excessively fine channel on the middle of the posterior part. Elytra with very regular coarse sculpture, taking near the suture the form of grooves; externally is a series of rather large punctures; the groove next the suture impunctate; third interstice with two short distant yellow marks on the posterior part, fourth with two on the anterior part, seventh with a very short one behind the middle, eighth and ninth each with a very short one, forming together a small geminate mark behind the shoulder. Under surface of head and metarostrum dull, without definite sculpture.

The two specimens quite agree.

6. **Episphales similis,** sp. n. (Tab. II. fig. 7, antenna.)

Niger, prothorace subænescente, opaco; elytris flavo-lineatis, fortiter punctatis, juxta suturam multi-sulcatis.
Long. 16 millim.

Hab. Guatemala, San Gerónimo and Purula in Vera Paz (*Champion*).

Closely allied to *E. facilis*, but with the punctuation of the elytra less coarse, the

yellow lines longer, the antennæ more slender and somewhat differently formed, the underside of the head with coarse seriate foveoles. Antennæ black; terminal joint elongate, twice as long as the tenth, bluntly pointed at the tip. Metarostrum deeply impressed longitudinally, the impression not divided into two parts. Thorax broad, dull, brassy, with traces of an obsolete fine channel along the middle of the posterior part. Elytra deeply striate, the stria next the suture nearly impunctate, the second and third with distant punctures; externally the punctures are larger and the striæ less definite; the punctures are very deep, but are separated from one another by rather large intervals; the third interstice more or less distinctly yellow at the base and behind the middle, the fourth yellow on the middle; there is also some indefinite yellow colour on the outside behind the shoulder. Underside of head and metarostrum with very large foveoles closely packed and regularly arranged.

Two specimens.

7. **Episphales minor,** sp. n.

Fusco-rufus, prothorace opaco, subænescente; elytris flavo-lineatis, multi-striatis, stria suturali impunctata, ceteris plus minus fortiter crenatis.

Long. 13 millim.

Hab. Mexico, Las Vigas (*Höge*).

Of this we have received but a solitary female; though very closely allied to *E. similis*, I think there can be no doubt that it is distinct. The underside of the head and rostrum with some large foveoles, which are rather widely separated and irregularly placed. The striæ on the elytra are only moderately broad, and the longitudinal intervals are definite and well-marked; the third interstice is yellow on the basal and apical thirds, the fourth is yellow on the middle, the seventh has a small yellow mark behind the middle, and the eighth a short mark behind the shoulder.

8. **Episphales elegans,** sp. n. (Tab. II. fig. 8, ♂.)

Rufo-castaneus, capite thoraceque opacis, elytris piceo-rufis, flavo-lineatis, externe fortissime punctatis, interstitiis minutis.

Long. 18–21 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*), Mochitlan in Guerrero (*Harford*).

Male with the rostrum elongate, suddenly dilated at the tip so as to form a prominent angle on each side of the apex; prorostrum sparingly granulate, with two series of larger prominences on the upper surface; metarostrum elongate, vertex rather deeply impressed; antennæ elongate, terminal joint very acuminate. Female with the prorostrum elongate, the metarostrum much shorter than in the male, the antennæ less elongate. Thorax 5 millim. long, 3 broad, broadest near the base, much narrowed in front, very dull. Elytra very deeply and coarsely sculptured, the sutural stria nearly impunctate,

the second and third striæ distinctly punctate, the more external parts very coarsely punctate in series, and with only small intervals between the punctures; the yellow marks are very conspicuous, the third interstice being yellow in greater part, there being, however, a long interruption on the middle; the fourth interstice has on the middle a yellow mark, which joins and overlaps the interrupted extremities of the mark on the third interstice; the apices of the elytra are nearly straight, truncate, but the angles are slightly prominent. The legs are long and slender, red, the tips of the femora black. The underside of the head and metarostrum dull and free from sculpture, the basal fovea being very conspicuous.

Ten specimens.

The more elongate rostrum of the male and the more conical head less abruptly constricted behind make it very doubtful whether *E. elegans* can remain associated with *E. rugicollis* and its allies.

9. **Episphales championi,** sp. n.

Ferrugineus, capite thoraceque opacis; elytris flavo-lineatis, externe fortiter punctatis.
Long. 13 millim.

Hab. GUATEMALA, Calderas 6000 feet (*Champion*).

This is very closely allied to *E. elegans*, but is a more slender insect, with thin antennæ, and much less coarse punctuation on the outer part of the elytra. In the male the sculpture of the prorostrum is obsolete. Though in other respects similar to *E. elegans*, I think it is specifically distinct therefrom, especially as the three male examples agree almost exactly.

PHYMECHUS.

Phymechus, Senna, Notes Leyd. Mus. xvi. p. 219 (1895).

This genus consists of a single species.

1. **Phymechus jordani.**

Phymechus jordani, Senna, Notes Leyd. Mus. xvi. p. 220[1].

Hab. MEXICO, Oaxaca (*mus. Rothschild*[1]).

I am indebted to the Hon. Walter Rothschild for the opportunity of examining this species, of which we have no specimen in our collections.

TMETOGONUS.

Tmetogonus, Senna, Notes Leyden Mus. xvi. p. 224 (1895).

This is another of the genera recently established by Senna for insects closely allied to *Episphales* and *Orychodes*. I do not think the length of the head of much importance as a generic character; it is, at any rate, not so in *Arrhenodes*. It is rather

the form of the back of the head at its junction with the neck that we must look to for the purposes of generic synthesis. *Tmetogonus* appears to be closely allied to *Abrentodes* as well as to *Episphales*, but to be distinguished by the peculiar projection behind the eyes that suggested the name applied to the genus.

1. **Tmetogonus chiriquensis.** (Tab. III. fig. 2.)

Tmetogonus chiriquensis, Senna, Notes Leyden Mus. xvi. p. 225 [1].

Hab. PANAMA, Chiriqui [1].

Dr. Senna has kindly given me the opportunity of examining and figuring the unique type of this species.

UBANIUS.

Ubanius, Senna, Notes Leyd. Mus. xvi. p. 221 (1895).

This genus has been recently proposed by Dr. Senna for the single species mentioned below.

1. **Ubanius æneus.** (Tab. II. fig. 4.)

Ubanius æneus, Senna, Notes Leyd. Mus. xvi. p. 222 [1].

♀. Niger, nitidus, elytris lineolis numerosis flavis ornatis; prothorace elongato, polito; elytris seriatim sat fortiter punctatis, interstitiis leviter convexis.

Long. 32 millim.

Hab. MEXICO [1], Puebla (*Sallé*); PANAMA, Chiriqui [1].

The prorostrum is comparatively short, the antennæ being inserted at a distance in front of the eyes; they are short and stout, with five or six of the basal joints glabrous and shining, the terminal joint very acuminate; the metarostrum is black, very shining, very deeply depressed along the middle, the vertex not divided. The elongate thorax is vaguely rugose on the anterior part, but has no other sculpture; it is black, polished. Elytra with a single stria at the suture well-marked and impunctate, the outer series consisting of rather small punctures, the longitudinal interstices a little convex, more elevated behind; on each wing-case there are nine or ten short yellow lines. The under surface is black and shining, that of the head and metarostrum with two series of large foveoles; the prosternum is feebly transversely striate. Abdomen rather short, with vague traces of the basal part being composed of three consolidated segments.

We have received only one example of this species. It is of the female sex, but the male has been described by Dr. Senna [1]; by his kindness I have been able to compare our female with his type of that sex. The male is in the collection of the Brussels Museum, but its habitat is unknown.

PSALOBRENTHUS, gen. nov.

Mas. Corpus elongatum; rostrum thoracis longitudine, apice dilato; antennæ medianæ, mediocres; caput breve transversum, supra et subtus levissime constrictum, ad latera profunde constrictum, angulis liberis.

This very anomalous Brenthid appears to be nearest related to *Episphales* and *Belophorus*. The rostrum is rather broad, with a marked apical dilatation; the robust, if small, mandibles are quite prominent, and enclose an empty space. The head is compressed, and is separated from the globular neck above and below by only a very slight constriction, but the sides nevertheless form each a free angle projecting backwards. The front femora have a long slender tooth, and the curved tibiæ bear below the middle a long spine; the hind femora have a small sharp tooth. The abdominal segments are more elongate than they are in *Rhaphirhynchus*.

This genus has much in common with *Clæoderes*, but differs from it remarkably in the structure of the head, which in *Clæoderes* is lobed on the vertex but not at all on the sides, while in *Psalobrenthus* this part is lobed at the sides, but not at all on the vertex.

Lacordaire placed *Clæoderes* in his 'Brenthides vrais'; this position is, however, even in accordance with his own system, clearly erroneous, there being no depression at all on the underside to separate the head from the neck: either *Clæoderes* should form with *Psalobrenthus* a distinct tribe, or be associated with *Episphales*. I here adopt the latter course.

If we may trust Jekel's determination, in the British-Museum collection, of *Arrhenodes perlætus*, Schönh., that insect is a species of *Psalobrenthus*. A very curious Brenthid in the British-Museum collection, labelled "*Oxyscapus*, n. gen., Jekel," is apparently very closely allied to *Psalobrenthus*. The genus *Ubanius*, just established by Dr. Senna, differs in having the vertex in the middle abruptly constricted behind the eyes, whereas in *Psalobrenthus* the middle of the vertex is remarkably flat, and there is no abrupt constriction between it and the neck.

1. **Psalobrenthus solitarius,** sp. n. (Tab. II. fig. 10.)

Mas. Elongatus, fusco-niger, capite thoraceque subænescentibus, politis; elytris regulariter striato-punctatis, lineis flavescentibus ornatis.

Long. 28 millim.

Hab. Costa Rica (*Sallé*).

Antennæ with the five basal joints entirely glabrous and shining, the terminal three joints pubescent, ninth and tenth equal, each distinctly longer than the eighth. Rostrum just as long as the thorax, prorostrum flat above, metarostrum sulcate. Eyes elongate, prominent, but shining and little different from the contiguous polished parts. Thorax very elongate, polished, vaguely creased in front. Elytra with very regular series of punctures; next the suture with a single impunctate stria. The yellow lines are as follows:—second interstice with three lines, one from the base to the middle, and

one in front of, and another behind, the apical declivity; fourth interstice with three short, very distant marks, the sixth with two short marks on the posterior portion, the eighth with a mark on the middle. Under surface shining; metarostrum regularly biseriately foveolate; metasternum and abdomen not impressed. Base of hind femora compressed and lamelliform above.

We have received only one specimen of this fine and interesting insect.

HETEROBRENTHUS, gen. nov.

Antennæ mediocriter crassæ et elongatæ, haud pubescentes. Rostrum maris supra omnino muticum, apice dilatato, antennarum insertione fere mediana. Caput angustum, utrinque post oculos tuberculatum, vertice emarginato, angulis posterioribus liberis. Femora anteriora dentata, intermedia et posteriora mutica. Tibiæ anteriores intus dentatæ.

The species I separate under this name has perhaps more the appearance of a true *Brenthus* than of *Rhaphirhynchus*; nevertheless its affinities appear to be chiefly with the latter genus and *Abrentodes*, from both of which it differs by the form of the male rostrum, by the unarmed middle and posterior femora, and by the want of setosity on the antennæ. The shape of the head is peculiar, and is nearest to that of *Psalobrenthus*. There is, on the upperside, a well-marked constriction between the head and the neck, and the angles of the vertex project a little backwards over this, and are somewhat depressed; the eyes are placed at some little distance from the back of the head, and behind them a small angular projection exists on each side. The metarostrum of the male is rather long, but the antennæ are inserted distinctly behind the middle of the rostrum. On the underside the neck is very prominent, as in *Rhaphirhynchus*, but there is no true excision between it and the head. The structure of the breast and abdomen shows nothing remarkable, being much the same as in *Rhaphirhynchus*.

1. **Heterobrenthus distans,** sp. n. (Tab. II. figg. 9, ♂; 9 *a*, profile of the side of the head; 9 *b*, tip of antenna.)

Angustus, piceus; elytris vage flavo-signatis, ad suturam profunde bistriatis, externe obsolete seriatim punctatis; tibiis anterioribus intus dentatis.

Long. 10–19 millim.

Hab. Mexico, Juquila (*Sallé*), Temax in North Yucatan (*Gaumer*); Guatemala, Panzos, El Reposo (*Champion*); Nicaragua, Chontales (*Janson*).

Antennæ rather long and stout, reaching back two-thirds of the length of the thorax, destitute of outstanding setæ. Metarostrum of female moderately long, broad, deeply impressed. Eyes rather elongate. Vertex flat, placed above the eyes, on the middle with faint indications of an elevation; hind margin excised, hind angles prominent. Thorax elongate, smooth, moderately shining. Elytra with two deep striæ near the suture, externally with only obsolete distant punctures serially arranged, piceous; third interstice red, the colour interrupted on the middle; a long red mark behind the shoulder,

and a few short marks at the base and behind the middle; the sculpture at the apex very coarse, the apices obtuse, almost rounded; the third interstice is raised throughout, more strongly near the apex. Anterior femora strongly toothed, the others unarmed. Anterior tibia with a strong tooth on the middle of the inner margin; underside of head and metarostrum with very coarse foveoles.

We have received only one example from each locality, and amongst them there is but one male; it has the metarostrum and posterior part of the prorostrum obsoletely sulcate; the two teeth on the front legs are longer than they are in the female, and the apices of the elytra are less rounded, almost straightly truncate; the posterior femora are compressed and laminate at the base.

ESTENORHINUS.

Estenorhinus, Lacordaire, Gen. Col. vii. p. 431 (1866).

This genus comes excessively close to *Arrhenodes*, but may be distinguished by the fact that the back of the head on the upper surface is not separated from the neck by any depression. This character is common to both sexes, whereas those mentioned by Lacordaire will distinguish only the large males of the two genera, but not the small males or the females.

The genus consists of four or five species found in equatorial America and Cuba.

1. **Estenorhinus guttatus,** sp. n. (Tab. II. figg. 11, ♂; 11 *a*, profile of head.)

Rufus, thorace nigro-bisignato, elytris guttis flavis elevatis ornatis.
Long. 17–27 millim.

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

This insect is of shorter form than *E. designatus*, Boh., is of a brighter red colour, and has the yellow marks on the elytra differently disposed, they being distributed in a more irregular manner. Antennæ moderately long, red. Metarostrum slightly sulcate along the middle. Thorax pale red, with a broad black mark on each side, which reaches neither the base nor the front margin. Elytra red, rather short; surface slightly uneven, obsoletely punctate-striate, with numerous conspicuous, yellow, slightly raised spots, disposed as follows: on the third interstice two at the base, nearly united to form a line, one behind the middle, and an apical short line; on the fourth interstice a spot on the middle and one behind the middle; on each of the fifth and sixth interstices a spot before the middle and one behind the middle; on the seventh interstice a spot behind the middle, on the eighth a large spot behind the shoulder, and on the ninth one near the apex. Apices of the elytra distinctly bidentate. Under surface red.

Seventeen examples.

ARRHENODES.

Arrhenodes, Schönherr, Disp. Meth. p. 70 (1826); Gen. Curc. i. p. 313 (1833); Lacordaire, Gen. Col. vii. p. 429.

Arrhenodes * is a genus of about thirty-two species; formerly it was the most extensive of the Brenthidæ, and still includes foreign elements. It is considered to be distributed both in the New and Old Worlds, but the species of the Eastern Hemisphere will no doubt be ultimately all separated.

1. **Arrhenodes funebris,** sp. n. (Tab. II. fig. 12, ♂.)

Niger, opacus, elytris rufo-signatis.
Long. 14–25 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Eyes in male placed much in front of the neck. Terminal joint of antennæ some what longer than usual. Thorax entirely black. Elytra dull black, seriately punctate, the interstices more or less carinate; marked with orange-red in a very conspicuous manner; the third interstice yellow from the base to one-third of the length, behind the middle with a short mark, which is the more internal one of a series of four forming a short curved transverse fascia, then again with a longer mark at the apex; fourth interstice with a moderately long mark on the middle, behind this with a short one forming part of the transverse fascia; fifth interstice with a mark forming part of the fascia, and sometimes also with a very minute dot in front of the middle; sixth interstice with a short mark in front of the middle (the mark that would be part of the transverse series is absent on this interstice); beneath with a short mark before the extremity forming the outer one of the transverse fascia; eighth interstice with a short mark between the shoulder and the middle: besides these marks there is also a dot on the front of the humeral angle. Apices of the elytra rather strongly dentate. Terminal ventral segment of male furnished with numerous short yellow hairs.

We have received a fine series of about one hundred examples of this species. The red marks are remarkably constant. The black colour of some parts of the surface and legs may become diluted into a sort of dark vinous red. The size and development of the male vary enormously.

2. **Arrhenodes flavolineatus.**

Arrhenodes flavolineatus, Gyll. in Schönh. Gen. Curc. v. p. 473 [1].

Hab. Mexico [1], Toxpam (*Sallé*), Cordova, Misantla, Bobo, Cerro de Plumas (*Höge*); British Honduras, R. Sarstoon, Belize (*Blancaneaux*); Guatemala, Panzos, Teleman,

* *A. elegans*, described from our region by Dr. Senna (Bull. Soc. Ent. Ital. xxi. p. 104), has since been withdrawn (*t. c.* xxiv. p. 48) as founded in error.

San Juan, Chacoj, Tamahu, Cubilguitz, and Coban, all in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt, Janson*).

This species varies greatly as regards the size and development of the male; but the colour and the yellow marks are remarkably constant. Our series amounts to nearly seventy examples.

3. **Arrhenodes goudoti.**

Arrhenodes goudoti, Kirsch, Berl. ent. Zeitschr. 1867, p. 215[1].

Niger, thorace rufo trivittato; elytris aurantiaco-vittatis.
Long. 10½–24 millim.

Hab. Guatemala (*Sallé*), Panzos and Teleman in Vera Paz, El Tumbador, Cerro Zunil, Las Mercedes, Zapote (*Champion*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Colombia, Bogota[1] (*coll. Sharp*).

Var. Corpore rufo-obscuro, thorace nigro-bivittato.

Hab. Mexico, Toxpam (*Sallé*).

Closely allied to *A. flavolineatus*, but readily distinguished by the black colour of the body and appendages, and by the more complex marks on the elytra. Head short behind the eyes; head and metarostrum above usually more or less rufescent; antennæ black. Thorax black, with a broad red stripe along the middle and one on each side; sternum sometimes vaguely rufescent in front. Elytra seriately punctate; the interstices carinate to a variable extent—the third rufescent from the base to the apex, with a rather short interruption on the middle; the fourth with a rather short yellow mark outside of the interruption of this colour on the third interstice; the fifth sometimes with a dot outside the mark just mentioned, but sometimes with no red mark; the sixth with a short mark placed scarcely farther forwards than that on the fourth; the seventh with a mark a little in front of the apex, occasionally with a dot outside the mark on the sixth interstice; eighth with a long line from the shoulder extending nearly half the length. Apices of the elytra only very obscurely bidentate. Abdomen sometimes rufescent along the middle.

Our series of *A. goudoti* numbers about fifty examples; though the male is extremely variable in size and development, the red markings may be relied on for the determination of the species.

The only exponent we have received from Mexico is of pallid colour, and to a certain extent intermediate between *A. goudoti* and *A. flavolineatus*.

4. **Arrhenodes concolor,** sp. n. (Tab. II. fig. 13, head with mouth open.)

Angustior, rufo-brunneus, elytris flavo-signatis.
Long. 15–24 millim.

Hab. Mexico, Toxpam (*Sallé*), Bobo (*Höge*); Nicaragua, Chontales (*Janson*); Panama, Tolé (*Champion*).

Head elongate; rostrum not abruptly dilated at the apex, the sinuous carinæ of the prorostrum strongly elevated. Thorax concolorous with the rest of the surface, without any darker marks. The elytra are rather long and narrow, quite dull, with the serial punctuation indistinct, the interstices a little convex, but broad and not at all carinate, the apices distinctly bidentate; the yellow marks placed as follows: third interstice with a basal line, that may extend one-third or only one-sixth of the length, behind the middle with a dot forming part of a transverse fascia, and at the apex with a longer line; fourth, fifth, and seventh interstices, and sometimes the sixth also, each with a short mark behind the middle forming, together with the similar mark on the third interstice, a transverse fascia, the more external mark being placed a little farther back than the others; fourth interstice with a short mark on the middle, the fifth and sixth each with a very short one placed more forwards than the last-mentioned one; eighth interstice with a short line behind the shoulder; humeral angle with a yellow dot. Terminal ventral segment of male set with short yellow setæ.

This species is apparently rare; though so widely distributed in our region we have received only ten examples. The two specimens from the State of Panama have the basal yellow line on the third interstice longer than it is in the specimens from the other localities. The insect is comparatively longer and narrower than our other species of the genus. The anterior parts of the body are sometimes vaguely infuscate. Two males from Chontales exhibit the peculiarity of having the palpi and lobes (I presume of the maxillæ) very elongate, as shown in our figure; while specimens from Mexico and Panama do not exhibit this exceptional structure. A similar exsertion of the mouth-parts occurs in some examples of *A. flavolineatus*.

Arrhenodes dispar and several other species of the genus have the elytra marked almost as in *A. concolor*, but in *A. dispar* the head is short. I have seen specimens of an *Arrhenodes* from the Amazons that come very close to *A. concolor*, but they have the yellow mark on the eighth interstice reduced to a mere dot.

5. Arrhenodes angulicollis.

Arrhenodes angulicollis, Gyll. in Schönh. Gen. Curc. i. p. 318[1]; v. p. 472[2].

Hab. Mexico[2].—Brazil[1].

It is very doubtful whether this insect was really found in our region. It was described in the first place[1] from Brazil on male examples; Mexico being added in a subsequent volume as a locality of the female[2]. The elytra are black, but in markings they agree, according to description, with *A. concolor*, except that the apical spines are ferruginous. Boheman[1] describes the head as short; if this be correct, it would bring *A. angulicollis* very near to the common South-American *A. dispar*.

6. **Arrhenodes xanthozonatus.**

Arrhenodes xanthozonatus, Jekel, Ann. & Mag. Nat. Hist. (3) ii. p. 356[1].

Hab. Central America[1].

It is quite doubtful whether this insect, which formed part of a collection made during the voyage of H.M.S. 'Herald,' was found in our region. The district mentioned is "the Pacific shore of Central America, a few specimens from more northern parts." It is probable that the species is a *Cyriodontus*.

RHYNCHONEUS, gen. nov.

♀. Corpus parum elongatum, prothorace lato anterius subretuso. Caput superne vix a collo separatum, ad latera profunde excisum, angulis liberis; metarostro lato, sat elongato; prorostro parum elongato, minus terete.

The curious insect for which I propose this genus can only be compared with the female of *Arrhenodes*; unfortunately the male is unknown, but in all probability it will prove to be allied to *Arrhenodes*, next which genus *Rhynchoneus* should at present be placed.

In the form of the head *Rhynchoneus* approaches *Estenorhinus*, the vertex being depressed and flat in the middle, so that it is not there separated from the neck by any distinct constriction; at the sides the constriction is deep and the angles project backwards as free lobes; the eyes are unusually convex; on the under surface the back of the head is formed as in *Arrhenodes*, female. The antennæ are formed as in *Arrhenodes*, but shorter; they are inserted farther from the eyes, so that the metarostrum is rather longer and the prorostrum somewhat shorter than they are in *Arrhenodes*; the latter part is not perfectly cylindrical, but a little attenuate in front. All the femora are toothed, but the front tibiæ have no projection on the inner margin; the tooth on the femur is placed nearer the extremity than it is in *Arrhenodes*, and is followed by a more abrupt excision.

1. **Rhynchoneus belti,** sp. n. (Tab. II. figg. 14; 14 *a*, profile of head and front of thorax.)

Rufo-obscurus, prothorace opaco, utrinque vage nigro-plagiato; elytris fortiter seriatim punctatis, interstitiis subcarinatis, lineolis aurantiacis octodecim ornatis.

Long. 11–25 millim.

Hab. Nicaragua, Chontales (*Belt*).

Metarostrum broad, with two vague tubercles between the antennæ, and with the pterygia angularly prominent; head with some coarse irregular elevations between the eyes; antennæ short. Thorax broad, the disc forming in front on each side a more or less distinct angular prominence, in front of which the surface is perpendicular; of a very dark vinous-red colour, marked vaguely with black on each side. Elytra dull, short, with large, remarkably deep punctures closely placed, the interstices behind the

middle being distinctly carinate; the stria next the suture is distinctly punctate, though the punctures in it are much less coarse than elsewhere; the third interstice bears three short yellow marks—one basal, one apical, one post-median; fourth interstice with a median short mark; fifth and sixth interstices with small spots forming a geminate ante-median mark, fifth with a post-median mark, seventh also with a post-median spot, eighth with a post-humeral mark. Tips of the elytra rounded, with scarcely a trace of lateral tooth. Head and metarostrum beneath with foveoles biseriately arranged.

Four specimens.

ABRENTODES, gen. nov.

Antennæ mediocres. Rostrum parum elongatum, apice haud dilatato; antennis maris fere medianis. Caput pone oculos breve, subtus fissura tantum sat profunda a collo separatum.

The insects I place in this genus may all of them be described as more or less intermediate between *Rhaphirhynchus* and the species of *Episphales* with abruptly defined neck, while making at the same time a decided approach to *Brenthus*, on account of the well-marked fissure by which the underside of the head is separated from the neck. This character separates the genus from *Rhaphirhynchus*, from which *Abrentodes* is also distinguished by the shorter antennæ. As these two characters were considered by Lacordaire of great importance, it is very difficult to place the genus satisfactorily in his classification. *A. auratus* comes, however, very close to *Rhaphirhynchus*, and has longer antennæ than the other species I assign to the genus.

The species seem to be all extremely rare; they are perhaps the most difficult of the Brenthidæ of our region to recognize, and are altogether very puzzling insects. *A. auratus* and *A. breviceps* greatly resemble the less elongate *Rhaphirhynchi*, while *A. robustus* and *A. sulcipennis* have rather the facies of small *Episphales*.

1. **Abrentodes auratus,** sp. n. (Tab. II. figg. 15, ♀; 15 *a*, head and rostrum, ♂.)

Minus elongatus, nitidus, auratus, prorostro antennisque nigris; pedibus piceis; elytris flavo-signatis.
Long. 9–10 millim.

Hab. Guatemala, Coban (*Conradt, Champion*), Senahu and San Juan in Vera Paz (*Champion*).

Var. Minor, niger, minus auratus.
Long. 7 millim.

Hab. Mexico, Jalapa, Juquila (*Höge*).

This species has quite the facies of the less elongate forms of *Rhaphirhynchus*, but is remarkable from the extreme polish of the thorax. Antennæ slightly longer in the male than in the female; the three basal joints shining, the others pubescent. Rostrum of male armed and formed above as in *Rhaphirhynchus*, but shorter, very little broader towards the tip; beneath polished and terete, looking like the rostrum of a female

—in this latter sex the prorostrum is very slender; the insertion of the antennæ is similar in the two sexes, the point being, however, just perceptibly nearer to the head in the female. The thorax is broad, greatly rounded, and the sides, narrowed in front, contracted behind, of a highly polished golden colour. Elytra with two impunctate striæ next the suture, at the extreme base with the commencements of two other striæ which soon become series of distant obsolete punctures; the sculpture at the extremity becomes much deeper, so that there are eight grooves with more or less convex intervals; the apices are sinuate-truncate, the outer angle very slightly prominent: the yellow marks are placed, three of them on the third interstice, two near the outer margin behind the shoulder, and three or four behind the middle, disposed so as to form the rudiments of a fascia. Both sexes have serially arranged foveoles on the underside of the head and metarostrum. The male has the base of the abdomen impressed, and the first segment studded in the middle with fine punctures, from each of which rises a delicate, curved, erect seta.

Six specimens.

This species is apparently much subject to the attacks of a parasitic Acarid, the individuals of which attach themselves in great masses to the femora.

2. **Abrentodes breviceps,** sp. n.

♀. Niger, capite thoraceque aureo-æneis, politis; elytris flavo-lineatis, ad suturam tristriatis, externe seriatim minus fortiter punctatis.

Long. 16 millim.

Hab. GUATEMALA, Panima in Vera Paz (*Champion*).

This species, in sculpture, is very like a *Rhaphirhynchus*, but in respect of the structure of the head, which is broad and short, it comes somewhat near to *Episphales*. We have received, unfortunately, only a single example. The antennæ are rather short—$4\frac{1}{2}$ millim. long; the metarostrum is deeply impressed; the head is short and broad, with the eyes convex, deeply constricted behind, the middle of the vertex in front of the constriction slightly foveolate. Thorax brassy, highly polished, with a minute and distant punctuation. Elytra next the suture with three moderately broad striæ, which are almost completely impunctate, outside this with four series of rather fine punctures, which behind become grooves; apical angles quite rounded; third interstice with an elongate mark on the middle, and a short one behind, fourth with one at the base extending one-third of the length, seventh with a very short one behind the middle, ninth with a longer one behind the shoulder. Under surface brassy-black, polished.

3. **Abrentodes pusillus,** sp. n.

Piceus, capite thoraceque ænescentibus, politis; elytris ad suturam quadri-striatis, externe in medio seriatim punctatis, flavo-lineatis, angulo externo apicali obtuso.

Long. $7\frac{1}{2}$–$9\frac{1}{2}$ millim.

Hab. GUATEMALA, Purula and Sinanja in Vera Paz, Cerro Zunil (*Champion*).

Prorostrum of male not armed above with any definite prominences, and with only obscure traces of divergent carinæ; metarostrum sulcate; head rather long and narrow; antennæ moderately long. Thorax highly polished; not at all flat, moderately large, without rugæ or sculpture. Elytra with three rather deep striæ having scarcely any trace of sculpture next the suture, outside this with a fourth stria, which is quite shallow in the middle, and there very distinctly punctate, outside this with another groove still more broadly interrupted in the middle; marked with yellow longitudinally, in a somewhat vague and apparently variable manner; without any trace of tooth at the apex. Base of the abdomen of the male extremely slightly depressed along the middle. Under surface of the metarostrum with a few serial foveoles in each sex.

We have received one example only from each locality. They indicate that this very obscure species is more than usually variable. The resemblance to *Rhaphirhynchus* in the male rostrum and form of the antennæ is quite evident, though the general facies is more that of some of the "Brenthides vrais" than is the case with *A. auratus*.

4. **Abrentodes sulcipennis,** sp. n. (Tab. II. fig. 16, ♀.)

Nitidus, niger, prothorace vix subænescente; elytris flavo-lineatis, multisulcatis, sulcis haud perspicue punctatis.

Long. 8–15 millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

Antennæ rather short, the outer half or more well set with setæ. Prorostrum very polished, rather stout, quite straight; metarostrum and head highly polished, the former quite short, with a deep depression. Thorax rather short and broad, much rounded at the sides, very highly polished. Elytra with numerous deep and regular striæ, which are not distinctly punctate, though, viewed a little obliquely laterally, the interstices are seen to be crenate; they are marked with elongate yellow marks, the interstices on which these are placed being considerably broader than the others; the third interstice is yellow for only one-third or less of the length, the part so coloured being that before the apex; the fourth interstice is yellow from the base to beyond the middle, where it forms a splice, or overlap, with the yellow of the third interstice; the fifth interstice is yellow only at the basal margin, the eighth has a long streak from the shoulder to behind the middle, and there is a very short yellow mark on the seventh just where the yellow of the eighth interstice ends. Apex of metasternum with a well-marked round fovea. Underside of the head and metarostrum with a few large foveoles.

Three specimens.

Although similar to *A. pusillus*, this species may be readily distinguished by the sculpture of the elytra. The prorostrum in the male is short, and has a few minute asperities on each side on the upper surface.

5. **Abrentodes robustus,** sp. n.

Niger, prothorace ænescente, polito ; elytris flavo-variegatis, multisulcatis, sulcis duobus ad suturam impunctatis, sulcis externis crenato-punctatis, interstitiis haud latis.
Long. 15 millim.

Hab. GUATEMALA, Purula (*Champion*).

Head and metarostrum scarcely different in the two sexes, the metarostrum rather long, deeply impressed along the middle. Prorostrum of the male short, with a series of projections on each side, above, like those existing in *Rhaphirhynchus*; neck of the head very abrupt. Thorax highly polished, moderately broad. Elytra rather short, with very regular and deep striation; in the first two striæ punctures are scarcely evident, in the next they are obscure, but in those more external so distinct as to make the striæ very conspicuously crenate ; the third interstice is yellow for nearly half the length posteriorly, the fourth is yellow from the base for three-fourths of the length, the fifth has a very short streak behind the middle, the seventh a longer streak behind the middle, while the eighth is yellow from behind the shoulder for the greater part of the length : there are also a few other more vague yellow marks. The under surface is polished and shining, the ventral segments depressed along the middle in the male. Both the sexes have deep foveoles on the under surface of the head and metarostrum.

Two specimens.

Although closely allied to *A. sulcipennis*, I have little doubt this is distinct ; it may be distinguished by the deeper, broader striæ of the elytra, which, too, are more evidently punctured.

CLÆODERES.

Clæoderes, Schönherr, Gen. Curc. i. p. 362 (1833) ; Lacordaire, Gen. Col. vii. p. 440.

This genus includes only a single South-American species in addition to those found in our region.

1. **Clæoderes biserrirostris.**

Clæoderes biserrirostris, Boh. in Schönh. Gen. Curc. v. p. 526[1].

Hab. MEXICO[1], Jalapa (*Trujillo, Höge, Morrison*).

This insect is readily distinguished from the other species of the genus, so far as the male sex is concerned, by the front femora being definitely bidentate : the outer tooth is shorter than the inner, and is more widely separated from it than is the small tubercle that in some individuals of the other species might be accepted as a tooth. The outer yellow line is usually present in only an abbreviated form ; this character, and the fact that the antennæ are more slender at the apex than they are in the other species, offer the only means, so far as I see, for distinguishing the females.

Although we have received *C. biserrirostris* from only one locality, yet, as there are about thirty specimens before me, it seems possible the species may be a good one.

2. Clæoderes mexicanus.

Clæoderes mexicanus, Boh. in Schönh. Gen. Curc. v. p. 524 [1].

Hab. Mexico [1], Toxpam, San Andres Tuxtla (*Sallé*), Jalapa (*Höge*, *Trujillo*), Almolonga, Bobo, Las Vigas (*Höge*), Omilteme and Xautipa in Guerrero (*H. H. Smith*), Mochitlan in Guerrero (*Baron*); British Honduras (*Blancaneaux*); Nicaragua, Chontales (*Janson*).

The outer yellow line is apparently always present in this species, and the tubercle outside the large tooth on the front femur can constantly be detected in the male. We have received nearly forty specimens of the species, of which eight are from Nicaragua. It is curious that this insect has not been found in Guatemala.

3. Clæoderes guatemalenus, sp. n. (Tab. III. figg. 1; 1 *a*, last three joints of hind tarsus, ♂.)

Niger, thorace utrinque ad basin rufo, elytris flavo-quadrilineatis.
Long. 11–36 millim.

Hab. Guatemala, Balheu, San Gerónimo, Purula, Coban, Senahu, and San Juan in Vera Paz, El Tumbador, Cerro Zunil, Zapote, Capetillo (*Champion*).

Mr. Champion procured a fine series of between eighty and ninety specimens of this species, which may readily be distinguished from all the others of the genus by the patch of red colour on each side of the thorax. Both the yellow lines on the elytra are conspicuous and entire. In the male there is a small tubercle on the front femur near the elongate tooth. The apical joint of the antenna is thick. The claw-joint of the hind tarsus of the male is compressed laterally, so as to be lamellate.

Although extremely close to *C. mexicanus*, this insect can always be distinguished by the colour of the thorax, and, in addition to this, the outer apical angle of the elytra is less obtuse. The insect inhabits both the Atlantic and Pacific slopes of Guatemala.

4. Clæoderes bivittatus.

Clæoderes mexicanus, var. *bivittatus*, Boh. in Schönh. Gen. Curc. v. p. 525 [1].
? *Clæoderes bivittatus*, Kirsch, Berl. ent. Zeitschr. 1867, p. 219 [2].

Hab. Costa Rica (*Van Patten*), Volcan de Irazu, Rio Sucio (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).—Colombia [1], Bogota [2].

In this species there is but one tooth on the front femur, but it is longer and more acute than usual; the outer yellow line of the elytra is usually entirely absent, but is sometimes present as a short thin mark. The male can always be distinguished from the corresponding sex of the other species of the genus by the fact that the last joint of the hind tarsus is simple, whereas in all the other *Clæoderes* I have seen this joint is compressed and laminate in a very curious manner.

I have examined about fifty examples of the species. Unfortunately, I have had no

opportunity of examining any specimens from south of the Isthmus of Panama, so that I am not quite sure that our insect is really that intended by Boheman. Kirsch's description of the anterior tibia of *C. bivittatus* does not apply to our specimens.

Group **BELOPHERINA.**

Lacordaire distinguished this group from the Arrhenodina (Arrhenodides, Lac.) solely on account of the longer, more filiform antennæ. It will not be possible to maintain the group unless other characters shall be discovered.

RHAPHIRHYNCHUS.

Rhaphirhynchus, Schönherr, Gen. Curc. v. p. 504 (1840).
Raphirhynchus, Lacordaire, Gen. Col. vii. p. 436.
Rhaphidorrhynchus, Gemminger and Harold, Cat. Col. ix. p. 2711.

This genus has recently been revised by Dr. Senna, who considers it to consist of fifteen species found in South and Central America.

It is doubtful whether the genus can be satisfactorily distinguished from the Antillean *Belophorus*: the character chiefly relied on by Schönherr was the absence of apical dilatation of the sides of the tip of the rostrum of the male; this, however, is exhibited in a rudimentary form by certain *Rhaphirhynchi*—e. g. *R. auricollis* and *R. linearis*—becomes quite well-marked in *R. severini*, and in *R. principalis* is conspicuous.

The *Rhaphirhynchi* seem to be rarely met with in any numbers, and the species are difficult to distinguish. I have before me representatives of nineteen species, and if Dr. Senna's localities may be relied on—which is not clear in certain cases, they being taken from old records—several other South-American species occur in our region. In the arrangement of the species I have followed, on the whole, the system of Dr. Senna; I find it impossible to make a dichotomous table that would be satisfactory, the males of some of our species being unknown to me. The characters to be looked at are, in the first place, the sculpture of the elytra, and whether the male has a projecting process on the underside of the first joint of the antenna or not. The length and width of the head are also of great importance, and the yellow marks on the elytra, though differing from species to species, do not, apparently, vary much in the same species.

1. **Rhaphirhynchus sexvittatus.**

Rhaphidorrhynchus sexvittatus, Senna, Ann. Soc. Ent. Belg. 1894, p. 596 [1].

Hab. MEXICO, Santecomapan (*Sallé*); GUATEMALA, Yzabal (*Sallé*), Chacoj (*Champion*); NICARAGUA, Chontales (*Belt, Janson*); PANAMA, Chiriqui [1].

This is a remarkable and very rare species; judging from the few examples we have

received, it is very variable in size and colour, and in the form of the process on the first joint of the antenna.

2. **Rhaphirhynchus amplicollis.**

Rhaphidorrhynchus amplicollis, Senna, Ann. Soc. Ent. Belg. 1894, p. 597 [1].

Hab. Mexico [1].—South America, Cayenne [1], Fonteboa [1].

We have not received a specimen of this species, which is described as allied to *R. sexvittatus*. I do not know on what evidence Mexico is given as one of the localities.

3. **Rhaphirhynchus filicornis,** sp. n. (Tab. II. fig. 17.)

♂. Gracillimus, niger, opacus, prothorace medio rufescente; capite posterius angustato et rotundato, subtus foveolis duodecim munito; elytris lineis flavis ornatis, apice truncato, utrinque brevissime denticulato.
Long. 8 millim.

Hab. Panama, Bugaba (*Champion*).

We have received a single example only of this species, which is one of the most distinct and elegant forms of the genus. The prorostrum is only very minutely granulate on the upper surface. The minute mandibles are exposed at the tip of the rostrum, and surround a free space. The metarostrum is elongate, deeply sulcate, the vertex striate-rugose. The antennæ are very long and slender. The thorax is long and slender, and has the surface dull; there is no channel, but the colour along the middle is obscurely rufescent. The elytra are narrow, dull black, with linear amber-like marks disposed as follows:—the third interstice with a short line at the base and a similar one beyond the middle; the fourth interstice with a very elongate line on the middle, overlapping the widely separated extremities of the lines on the third interstice; a short line on the seventh interstice in front of the apical declivity; and on the eighth interstice an elongate line. The head and metarostrum beneath have on each side six very large punctures serially placed; the rest of the under surface is black, shining, impunctate. The legs are remarkably slender.

4. **Rhaphirhynchus longulus,** sp. n. (Tab. II. figg. 18; 18 *a*, portion of the sculpture of the elytra.)

Elongatus, angustus, niger, opacus; elytris interstitiis tribus flavo-lineatis, juxta suturam sulco unico impunctato, externe seriatim fortiter punctatis, interstitiis subcarinatis.
Long. 11–18 millim.

Hab. Nicaragua, Chontales (*Belt*, *Janson*); Panama, Bugaba (*Champion*).

This species is remarkable from its elongate parallel form and deep black colour, dull above, shining on the under surface. The sculpture of the elytra is peculiar: the

rows of regular round punctures are placed on an opaque minutely sculptured surface, and are separated from one another by elongate intervals, while the longitudinal intervals are more or less elevated, the black portions thereof being less swollen, as it were, than the yellow. These yellow portions consist of the larger part of the third interstice, there being, however, on it an interruption of considerable extent in the middle; on the fourth interstice there is a yellow mark by the side of the black interruption on the third interstice; the eighth interstice is yellow for the greater part of the length. The thorax is remarkably elongate, and on the anterior part of the upper surface there are some small transverse asperities in each sex; in the male the flanks are also strigose transversely. The antennæ in this sex are very remarkable, there being a large descending process on the first joint, while the next four joints are made hollow and impressed beneath. The under surface of the metarostrum has no foveoles in either sex. The apices of the elytra are truncate, nearly straight, the outer angle being only very slightly prominent.

Although this species has an opaque appearance on the elytra, this is not due, as in the case of *R. sexvittatus*, to tomentum, but to a minute sculpture, with which, in addition to the usual coarser sculpture, the surface is covered.

5. **Rhaphirhynchus signifer.**

Rhaphirhynchus signifer, Boh. in Schönh. Gen. Curc. v. p. 505 [1].

Rhaphidorrhynchus signifer, Senna, Ann. Soc. Ent. Belg. 1894, p. 600 [2].

Hab. Mexico [1 2].

This is a rusty-red insect, with toothed elytral apices, and was described apparently from a single example of the male sex. It is unknown to me, as well as to Dr. Senna.

6. **Rhaphirhynchus principalis,** sp. n. (Tab. II. fig. 19.)

♂. Nigro-æneus; elytris nigris, flavo-lineatis; rostro elongato, apice dilatato; antennis pedibusque anterioribus perelongatis; elytris ad suturam tristriatis, externe seriatim punctatis.

Long. 27 millim.

Hab. Guatemala (*Conradt*).

Antennæ very long, the first three joints spinose beneath. Rostrum very long, the asperities of its upper surface strongly marked, at the tip rather broadly dilated on each side into an angle, which is turned upwards; the mandibles quite short, but exposed at the tip of the rostrum; metarostrum sulcate. Thorax very long, much narrowed in front, dull, brassy. Elytra one and a half times as long as the thorax; next the suture with three moderately deep striæ, outside this with series of rather fine punctures; extremity with a short, broad tooth at each outer angle, and at the suture with a small common angular emargination; they are marked with yellow as follows:—third interstice entirely yellow, except for two interruptions and a small space at the tip;

fourth and sixth interstices each with a very short mark at the base, the seventh with a short mark behind the middle; outer margin yellow from behind the shoulder to the middle. Under surface of the head and metarostrum not punctate, but with very strong asperities; prosternum with but few asperities.

We have received one specimen only of this very fine species; it is allied to *R. severini*, but is larger, and has the thorax dull, the elytra with three impunctate striæ next the suture, the prosternum much less asperate, the yellow marks a little different. In the structure of the male rostrum the insect approaches the genus *Belophorus*, but it lacks the peculiar form of the prothorax characteristic of the Antillean genus. The insect was probably found in Alta Vera Paz, though it is not labelled with any special locality.

7. **Rhaphirhynchus severini.**

Rhaphidorrhynchus severini, Senna, Ann. Soc. Ent. Belg. 1894, p. 602[1].

Hab. Mexico[1], Juquila (*Höge*).

We have received one specimen only of this species. Dr. Senna has kindly sent me his type, which is a small male, whereas our specimen is a large individual of that sex. It has the antennæ longer, the tubercles of the prosternum very largely developed, and differs a little in the yellow markings, which have the appearance of being less constant in this species than they are in some others of the genus. There is a slight apical lateral dilatation of the rostrum of the same kind, though less distinct, as in *R. principalis*.

8. **Rhaphirhynchus variabilis.**

Rhaphidorrhynchus variabilis, Senna, Ann. Soc. Ent. Belg. 1894, p. 606[1].

Hab. Mexico, Oaxaca[1], Cordova (*Sallé*), Las Vigas (*Höge*).

We have received two individuals only, of the male sex, of this species.

9. **Rhaphirhynchus obscurus,** sp. n. (Tab. II. fig. 20.)

♀. Nigro-piceus, supra ænescens, subopacus; pedibus piceis, tibiis dilutioribus; elytris versus suturam quadri-sulcatis, externe subtiliter striato-punctatis, apicibus sinuatim fere truncatis, lineis sat elongatis flavis tribus ornatis.

Long. 6–10 millim.

Hab. Guatemala, Cerro Zunil (*Champion*).

Two females from the above locality represent a species apparently very closely allied to *R. variabilis*, and having the same arrangement of striæ and punctuation on the elytra, viz. three quite impunctate striæ next the suture, then outside these another stria almost impunctate, and outside this series of fine punctures. The yellow lines are, however, different from those of *R. variabilis*: the third interstice is yellow

from the apex to halfway to the base, while the fourth is yellow from the base to halfway to the apex, so that the two yellow lines form a short overlap or splice on the middle; the ninth interstice is yellow nearly the whole length. The under surface is piceous-brassy; the only punctures on the under surface of the head are two just in front of the basal impression, and even these are quite wanting in the smaller of the two individuals.

10. **Rhaphirhynchus longimanus.**

Brentus longimanus, Lund, Skrivt. Naturhist. Selsk. v. 2, p. 86 (1802) [1]; Fabr. Syst. Eleuth. ii. p. 553 [2].

Rhaphidorrhynchus longimanus, Senna, Ann. Soc. Ent. Belg. 1894, p. 603 [3].

Hab. GUATEMALA [3].—SOUTH AMERICA [1 2 3].

We have not received a specimen of this South-American species in any of the collections amassed by our editors for the purpose of this work, and I do not know on what authority Dr. Senna [3] quotes Guatemala as amongst its localities.

11. **Rhaphirhynchus mexicanus.**

Rhaphidorrhynchus mexicanus, Senna, Ann. Soc. Ent. Belg. 1894, p. 608 [1].

Hab. MEXICO [1], Toxpam (*Sallé*); GUATEMALA, Yzabal (*Sallé*).

The male varies greatly in size. It and the female have foveolar punctures on the under surface of the metasternum. The large male has also some asperities, which are not seen in the small one. Eight specimens.

12. **Rhaphirhynchus panamensis.**

Rhaphidorrhynchus panamensis, Senna, Ann. Soc. Ent. Belg. 1894, p. 609 [1].

Hab. NICARAGUA (*Sallé*), Chontales (*Belt, Janson*); PANAMA [1], Bugaba, Volcan de Chiriqui 3000 feet, Caldera, Tolé (*Champion*).

This is the only species of the genus of which we have received a good series. It varies a good deal in size, in the colour of the antennæ (which, however, are never quite black), in the length of the spines at the tip of the elytra, and in the polish of the thorax. The yellow marks and the punctuation of the elytra are more constant. The amount of asperities on the basal joints of the antennæ is very inconstant. Only the female was known to Dr. Senna. The male-distinctions are less conspicuous than in most of the other species: the basal joint of the antennæ is simple, and the prosternum has no granulation; the foveolar punctures on the under surface are variable in number, but are apparently never entirely absent from the anterior part of the metarostrum.

Forty-seven specimens.

13. **Rhaphirhynchus politus.**

Rhaphidorrhynchus politus, Senna, Ann. Soc. Ent. Belg. 1894, p. 605 [1].

Hab. Mexico [1], Toxpam (*Sallé*).

The striation on the sides of the front of the thorax is very distinct in this species, and there is a biserial foveolation of the under surface of the head and metarostrum. This sculpture is very coarse in the female, and the foveoles are more approximate.

Three specimens.

14. **Rhaphirhynchus auricollis,** sp. n.

Æneus, nitidus, antennis pedibusque rufescentibus; elytris inæqualibus, fuscescentibus, numerose rufo-signatis, juxta suturam bistriatis, externe fortiter striato-punctatis, angulo apicali parum prominulo.

Long. 14 millim.

Hab. Mexico, Toxpam (*Sallé*); Nicaragua, Chontales (*Belt*).

Male. Antennæ rather long; first joint without descending process, but with a tubercle in its place; third joint a good deal longer than second. Head narrow; rostrum with a distinct, small, subangular dilatation at the tip, black. Thorax very shining, of a golden colour, broad, but very much narrowed in front in consequence of the narrow neck. Elytra broad, their surface somewhat uneven owing to a vague large impression on the middle and another impression behind; the tip sinuate-truncate, with the external angle a little prominent; of the series next the suture, only two are striæ; outside this are rows of large, very distinct punctures, the interstices being broad, not at all convex; the flavescent marks are none of them very long; short marks on the third to the seventh interstices form an interrupted transverse band behind the middle; the third interstice is flavescent from the base to the middle; the fourth and fifth interstices are flavescent at the extreme base, where the yellow colour, indeed, is continuous in the transverse direction from the third to the fifth interstices; the eighth and ninth interstices have a small geminate mark some distance behind the shoulder, and the ninth has also a very obscure mark near the tip; another obscure flavescent mark exists at the tip on the third interstice. Under surface brassy and polished; abdomen very feebly impressed along the middle; prosternum and under surface of the head and metarostrum granulate, the latter without serial punctures. Legs rather long.

The only species this resembles superficially is *R. politus*, but it is easily distinguished by the large punctures on the elytra, the broad interstices, and the vague depressions on the dorsal region.

Two specimens.

The male of *R. auricollis* has a minute angular dilatation of each side of the tip of the rostrum, so that this species may be taken as the first one of the series of forms uniting *Rhaphirhynchus* and *Belorhinus*.

15. **Rhaphirhynchus linearis.**

Rhaphidorrhynchus linearis, Senna, Ann. Soc. Ent. Belg. 1894, p. 607 [1].

Hab. MEXICO [1], Toxpam (*Sallé*); GUATEMALA, Zapote (*Champion*); NICARAGUA, Chontales (*Belt*).

The male has the under surface of the head and metarostrum dull, and bearing numerous granular asperities, but no foveolar punctures; the front of the prosternum is also granular. In the female these parts are shining and bear no asperities, but the metarostrum bears beneath six or seven foveolar punctures.

Six specimens.

The three individuals from Zapote are a variety of small size and very slender form.

16. **Rhaphirhynchus anomalus,** sp. n.

♀. Nigro-æneus, subtus nitidus, capite thoraceque cupreis, hoc transversim fortissime rugoso; elytris fortiter seriatim punctatis, flavo-variegatis, ad suturam stria prima impunctata, stria secunda obsolete punctata.

Long. 15 millim.

Hab. PANAMA, Bugaba (*Champion*).

We have received one example only of this extraordinary insect; it is distinguished from all the other species of the family by having the upper surface of the thorax scored by deep grooves; these cease at the sides, leaving the flanks polished and shining like the under surface. In other respects this female seems to be a normal *Rhaphirhynchus*; it is probable, however, that the male may possess some character peculiar to it. The metarostrum is short, vaguely longitudinally impressed. The sculpture of the elytra is deep and coarse; the stria next the suture shows no trace of punctures; the second stria is very indistinctly punctured; the third and fourth striæ, on the contrary, are punctured so as to be coarsely crenate; outside these there are rows of large punctures; the third interstice is yellow for nearly the whole length, with, however, an interruption on the middle; the fourth interstice has a short yellow mark on the middle, the seventh a short mark behind the middle, the eighth a short mark some distance behind the shoulder. There is a very short tooth at the outer apical angle of each elytron.

In size and general appearance this female is similar to the corresponding sex of *R. linearis*.

17. **Rhaphirhynchus jansoni,** sp. n.

♀. Nigro-æneus, subtus politus; thorace capiteque subopacis; elytris fortiter sculpturatis, versus suturam quadrisulcatis, sulcis duobus internis parum punctatis, tertio modice, quarto fortiter punctato, externe fortiter et profunde seriatim punctatis et ante apicem subsulcatis, apice sinuatim truncato, angulo externo parum prominulo, longitudinaliter flavo-lineatis.

Long. 17½ millim.

Hab. NICARAGUA, Chontales (*Janson*).

We have received but one female of this species; though very similar to *R. linearis* I have no doubt of its being distinct, the head being broader behind, the antennæ and legs thicker and shorter, and the yellow marks on the elytra different. The third interstice is yellow from the base to near the apex, with, however, a broad interruption in the middle; the fourth interstice is yellow on the middle, so as to overlap the division of the colour on the third interstice; the seventh interstice has a short yellow mark behind the middle, the eighth a short yellow mark from just behind the shoulder to near the middle. In *R. linearis* the outer yellow mark is on the ninth interval. The beautiful coarse sculpture of the wing-cases is very regular, and but little different from that of *R. linearis*. The head is polished beneath, and there are several foveoles on the anterior part of the metarostrum.

The position of the external mark—on the eighth instead of the ninth interstice—will distinguish this species from most of the others with which it might be confounded.

18. **Rhaphirhynchus rothschildi.**

Rhaphidorrhynchus rothschildi, Senna, Notes Leyd. Mus. xvi. p. 214[1].

Elongatus, angustus, æneo-niger, nitidus; prothorace anterius utrinque transversim strigoso; elytris ad suturam quadristriatis, externe subtiliter seriatim punctatis, minus intricatim flavo-lineatis.
Long. 12–19 millim.

Hab. NICARAGUA[1], Chontales (*Belt, Janson*).

This species bears some resemblance to *R. variabilis* and to *R. obscurus*, but has a highly polished thorax, which is strongly transversely strigose at the sides in front, and the male has a well-marked descending process on the first joint of the antennæ. The sculpture of the elytra is very much like that of the two species mentioned, viz. four impunctate grooves or striæ next the suture, and (outside these) series of rather fine punctures, which towards the extremity become punctate grooves. The apex of the elytra has a short tooth in the male, but is almost unarmed in the female. The third interstice is yellow for the greater part of its length, the yellow colour being once or twice interrupted; the fifth interstice has a minute mark at the base, the seventh an equally short one behind the middle, the ninth a short one below the shoulder.

Five specimens.

R. chiriquensis, which closely resembles this species, is very readily distinguished by the definite punctures of the elytra.

19. **Rhaphirhynchus chiriquensis,** sp. n.

♂. Nigro-metallicus, politus, elytris flavo-signatis; prothorace elongato, angusto, nitidissimo, anterius utrinque strigoso; elytris versus suturam punctato-sulcatis, stria unica absque punctatura, externe fortiter striato-punctatis, interstitiis latis.
Long. 17½ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

The colour of the metallic parts of the surface of this species is more like that of polished steel than of brass. The rostrum is rather long; the metarostrum is a good deal thickened from the base to the apex, where it does not exhibit any additional lateral expansion. The antennæ are elongate and slender; the basal joint beneath greatly arched, and with a descending slender angular process. The thorax is very elongate, highly polished, the lateral strigosity very distinct. The elytra have four grooves next the suture, of which only one can be said to be impunctate; the second is, however, only very indistinctly punctate, while the outer of the four is strongly punctate. The markings are: third interstice yellow, but the colour interrupted on the middle; fourth with two short yellow marks, one of them at the posterior part of the anterior half of the yellow colour on the third interstice, the other at the anterior part of the posterior portion; fifth interstice with a spot at the base; ninth interstice with a not very long mark behind the shoulder and a shorter one before the apex. Basal segment of the abdomen with a few erect hairs along the middle.

We have received only five males of this species; it resembles *R. politus*, Senna, but that species has the basal joint of the antennæ simple, and the yellow marks on the third and fourth interstices are, as it were, reversed in comparison with *R. chiriquensis*.

One of the individuals has the striæ on the sides of the thorax very strongly marked, but I think this character is somewhat variable. The length of the denticle at the apex of the elytra also varies, as it does in other species of the genus.

20. **Rhaphirhynchus sennai,** sp. n.

Minus gracilis, niger, prothorace sordide æneo, opaco; elytris ad suturam tristriatis, externe sat fortiter striato-punctatis, apicem versus angustatis, angulo externo haud dentato, interstitiis 3°, 4°, et 9° flavo-lineatis.

Long. 14–20 millim.

Hab. GUATEMALA, Purula (*Champion*).

The small individuals of this species resemble in form *R. panamensis* and its allies, but the large individuals are more robust, and differ from *R. panamensis* in that the legs and antennæ become thicker rather than longer; hence, large specimens of this species remind one of *Episphales*, while this is not the case with small individuals.

The antennæ are black, dull, without any descending process on the first joint. The prorostrum is black, stout, its armature rather large. Metarostrum, head, and thorax of a sordid brassy colour, very dull, the latter broad behind, the neck of the head somewhat broader than in *R. panamensis*. Elytra more than usually narrowed behind, and almost truncate at the tip; next the suture with three striæ, which are indistinctly punctate; the fourth stria distinct at the base, but at the middle ceasing to be a stria, and becoming for a short distance a series of punctures; outside this are three distinct

series of moderately large punctures; the interstices broad, except at the tip, where they are unusually narrow. Legs stout; first joint of the tarsi short. Neither male nor female has any serial foveolation on the underside of the head.

Eight specimens.

I have named this species in honour of Dr. A. Senna, of Florence, who is well known for his zealous work on this family of insects, and who has recently revised the characters of the species of this most difficult genus.

21. **Rhaphirhynchus nitidicollis.**

? *Brentus cylindricornis*, Fabr. Ent. Syst. i. p. 494[1].
Nemorhinus cylindricornis, Schönh. Disp. Meth. p. 71[2].
Arrhenodes nitidicollis, Gyll. in Schönh. Gen. Curc. i. p. 328[3].
Rhaphirhynchus nitidicollis, Boh. op. cit. v. p. 505[4].
Rhaphidorrhynchus nitidicollis, Senna, Ann. Soc. Ent. Belg. 1894, p. 610[5].

Hab. COSTA RICA[5].—SOUTH AMERICA, Colombia[5], Venezuela; ANTILLES, Guadaloupe[2 3 4 5].

We have not received any *Rhaphirhynchus* from Costa Rica. Dr. Senna does not say[5] on what evidence he records this species as occurring there.

22. **Rhaphirhynchus deceptor,** sp. n.

Mas. Angustus, nigro-æneus, subtus politus, supra thorace opaco; elytris ad suturam bistriatis, externe obsolete striato-punctatis, minus argute flavo-lineatis.
Long. 14 millim.

Hab. NICARAGUA, Chontales (*Janson*).

This species, though with no prominent characters, is really one that is not closely allied to any other. In the sculpture of the elytra it comes nearest to *R. severini*, Senna, from which it is extremely distinct by the narrow form, by the rostrum having no lateral apical dilatation, and by the spinous first joint of the antennæ. From *R. rothschildi* and *R. chiriquensis*, which it resembles in form and appearance—except in the opaque pronotum—it is readily distinguished by the diminished sculpture of the elytra.

The antennæ are elongate, the basal joint arcuate beneath and bearing a spinous process. The rostrum is elongate, its superior armature well developed; the metarostrum rather long; the head narrow. The thorax is dull above, elongate, finely strigose on each side in front. The elytra are rather short in comparison with the thorax; the two striæ next the suture are well marked; the outer series of sculpture are obsolete in the middle of the length, so that there the intervals are only distinguishable by some obsolete punctures; at the base the third stria is, however, well marked, and beyond the middle all the striæ are distinct; the yellow marks are not

so definite as in many of the other species of the genus, the intervals that bear them being less regular. The apex of the elytra bears a strong tooth on each side. There is no granulation on the prosternum.

The only individual I have seen has lost its locality-ticket; but I have no doubt, from other evidence, that it is one of the specimens found at Chontales by Janson.

Group **BELORHYNCHINA.**

TYCHÆUS.

Tychæus, Fischer, Mém. Mosc. vi. p. 266 (1823).
Belorhynchus, Latreille, Fam. nat. du Règne Anim. p. 390 (1825); Lacordaire, Gen. Col. vii. p. 437.

This very distinct genus consists of the following species:—

1. **Tychæus curvidens.**

Brentus curvidens, Lund, Skrivt. Naturhist. Selsk. v. 2, p. 59 [1]; Schönh. Gen. Curc. i. p. 341 [2].

Var. *signatus*: elytris in interstitio secundo linea flava nulla; thorace medio plus minusve rufo-signato, in femina rufo-trivittato.

Hab. Nicaragua, Chontales (*Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—South America, Brazil [1 2].

We have received a fine series of this remarkable Brenthid. The individuals from Nicaragua are smaller than those from Panama. Of the interesting variety we have eight individuals from the same localities in Nicaragua and Panama as the type form: they vary in length from 20 to 33 millim. Two of the examples are females and both have three red stripes on the thorax; in the males the red colour is very much diminished, but in both sexes the short yellow line behind the middle of the second interstice is entirely absent, and the basal mark on the same interstice is reduced to a mere dot. The species may be recognized by the recurved tooth at the apex of each elytron—the character, I presume, from which the trivial name is derived. The largest individual is 49, the smallest 18 millim. long.

Group **BRENTHINA.**

This group corresponds with the "Brenthides vrais" of Lacordaire after the removal of *Clœoderes*; this latter genus cannot, according to Lacordaire's system, be included in the group satisfactorily, and I have placed it at the end of the Arrhenodina. It appears to be allied to some of the aberrant forms included in that group and to *Rhaphirhynchus*.

BRENTHUS.

Brentus, Fabricius, Mant. Ins. i. p. 95 (1787).
Brenthus, Schönherr, Gen. Curc. i. p. 342; Lacordaire, Gen. Col. vii. p. 442.

This genus includes twenty-five species; it is one of the most characteristic genera of the Coleoptera of the Neotropical region.

In the collection of Mexican insects formed by M. Sallé there exists a specimen obtained from Sturm's collection and labelled by him "*Brenthus sub-bisulcatus,* mihi, Mexico." This is a species of the Madagascar genus *Piazocnemis*, or rather, perhaps, of a genus closely allied to *Piazocnemis.* As I feel sure it was labelled as Mexican by some error, I have not included the species in our descriptions, though it appears to be undescribed; it has the scape of the antennæ unusually long.

§ 1. *Prothorax sulcate along the middle, either on the basal half only or for the greater part of the length.*

1. Brenthus deplanatus.

Brentus caudatus, Oliv. Ent. v. no. 84, p. 440, t. 2. fig. 10 (1807) [1] (nec Herbst).
Brenthus caudatus, Gyll. in Schönh. Gen. Curc. i. p. 343 [2].
Brenthus deplanatus, Gyll. in Schönh. Gen. Curc. v. p. 528 [3].

Hab. Mexico [3], Orizaba (*Sallé*), Cerro de Plumas (*Höge*); Guatemala, Cerro Zunil (*Champion*), Panzos (*Conradt*); Nicaragua, Chontales (*Belt, Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—South America, Surinam [1 2 3], Brazil [3].

This varies greatly in size, but not very much in other respects. The elytral caudæ are not sexual in *B. deplanatus*; they vary in length according to the size of the individual, and in large females are nearly or quite as long as in the males of the same size. We have received a series of about seventy examples.

2. Brenthus armiger.

Brentus armiger, Herbst, Käfer, vii. p. 196, t. 108. fig. 5 [1].
Brentus canaliculatus, Fabr. Syst. Eleuth. ii. p. 551 [2].
Brenthus canaliculatus, Schönh. Gen. Curc. i. p. 346 [3].

Hab. Mexico, Ventanas, Presidio (*Forrer*), Orizaba, Toxpam, Playa Vicente (*Sallé*), Cordova, Bobo, Cerro de Plumas (*Höge*); British Honduras, Belize, R. Sarstoon (*Blancaneaux*); Guatemala, San Juan in Vera Paz, Mirandilla, Cerro Zunil (*Champion*), Coban (*Conradt, Champion*); Nicaragua, Chontales (*Belt, Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—South America [3] to Brazil [3].

The yellow marks on the elytra are variable in this species, and may be completely absent. The elytral caudæ in the male vary greatly in their length; they are never present in the female. In the latter sex the yellow marks are not nearly so variable

as they are in the male; indeed, the larger male individuals are those in which the marks are most reduced.

The synonymy of this species is very doubtful, and I have merely adopted that given in the Munich Catalogue. Herbst did not know the locality of his type, and his description and figure [1] are but poor. In our region this species is apparently chiefly northern in its distribution, we having received eight or nine individuals only from Panama. I have considerable doubt whether the South-American specimens really belong to the same species, but I have not seen sufficient examples to enable me to form a decided opinion. We have received about one hundred specimens from Central America.

3. **Brenthus championi,** sp. n. (Tab. III. fig. 3, ♂.)

Nigerrimus, elytris flavo-lineatis, interstitio quarto linea elongata aliaque brevi, interstitio tertio lineis duabus mediocriter elongatis; elytris fortiter sculpturatis, interstitio secundo angusto, interstitiis externis subcarinatis.

Long. $8\frac{1}{2}$ millim.

Hab. GUATEMALA, Zapote (*Champion*).

We have received a single example only of this species; it is of the male sex, and in sculpture more resembles *B. armiger* than any other member of the genus, but it differs from that insect in the total absence of caudal prolongations, as well as in the form of the head and rostrum. It agrees with *B. multilineatus* in the disposition of the yellow marks on the elytra, but it is distinct therefrom by the sculpture, by the more strongly toothed front tibiæ, and by the shorter antennæ. Antennæ short and stout, thickened towards the extremity, joints 7–10 transverse. Rostrum short and broad; prorostrum deeply sulcate. Thorax sulcate from near the base to near the apex. Elytra black, with pale yellow lines disposed as follows—one at the base of the fourth interstice extending quite one-third of the length, and one very short, just behind the middle; third interstice with two lines of equal length—one on the middle, and one on the apical portion; second interstice extremely narrow, except at the base and apex; sides of the elytra coarsely and closely punctate, so that the interstices are very narrow, and look like crenate carinæ scarcely raised. Prosternum, metasternum, and abdomen canaliculate. Terminal ventral segment remarkably coarsely punctate.

It is quite possible that this insect may prove to be a dwarf form of the male of *B. armiger*, in which, concurrently with the absence of the usual male prolongations, the metarostrum, head, and thorax have the form of these parts in the female. The var. *insubidus*, Kirsch, of *B. armiger*, has the tails very short; in speaking of that species I have mentioned that the length of the male caudæ is very variable.

4. **Brenthus anchorago.**

Curculio anchorago, Linn. Syst. Nat. 10th edit. i. p. 383 [1].

Brenthus anchorago, Schönh. Gen. Curc. i. p. 343 [2].

Hab. MEXICO, Ventanas in Durango (*Forrer*), Vera Cruz, Toxpam, San Andres Tuxtla (*Sallé*), Cordova (*Sallé*, *Höge*), Bobo, Almolonga, Las Vigas (*Höge*), Jalapa (*Morrison*), Atoyac, Acapulco (*H. H. Smith*), Mochitlan in Guerrero (*Baron*), Temax in North Yucatan (*Gaumer*); BRITISH HONDURAS, Belize, R. Hondo, R. Sarstoon (*Blancaneaux*); GUATEMALA, Panzos, Teleman, Chacoj, San Juan, Lanquin, Cahabon, Coban, and Cubilguitz in Vera Paz, El Tumbador, El Reposo, Las Mercedes, San Isidro, Volcan de Atitlan, Pantaleon (*Champion*); SALVADOR, Portesuelo (*Sallé*); NICARAGUA, Chontales (*Belt*, *Janson*); COSTA RICA, Volcan de Irazu 6000 to 7000 feet (*Rogers*); PANAMA, Bugaba, Volcan de Chiriqui up to 4000 feet, Tolé (*Champion*).—SOUTH AMERICA to Brazil [2].

We have received a very large series consisting of some hundreds of examples of this species. The variation in length is enormous, and is perhaps not equalled in the case of any other species of Coleoptera, small males being only 10 or 11 millim. long, while large examples of the same sex attain 52 millim. In other respects the species in our region varies but little; the external yellow stripe of the elytra is usually elongate, and the punctuation of the elytra is usually less obsolete than it is in Brazilian examples. None of the specimens of our large series are marked with red. More important distinctions from Brazilian examples exist, inasmuch as in the Central-American specimens the channel on the under surface of the rostrum of the male is more definite and more prolonged anteriorly, extending as far as the pterygia; in the female the antennæ are usually inserted further from the eyes than in Brazilian examples. The apices of the elytra are separated in our specimens by a wider chink, and they rarely exhibit any trace of the dentation seen in Brazilian individuals.

In this species the thoracic channel is always confined to the posterior half, a character of special importance for the discrimination of the female.

In the specimens from the central and northern portions of our region the outer yellow stripe always extends to the shoulder, but from Costa Rica southwards individuals may be found in which the stripe is abbreviated like it is in South-American examples.

Brenthus lucanus, Horn, from Lower California, is almost certainly *B. anchorago.*

5. **Brenthus mexicanus.**

Brenthus mexicanus, Boh. in Schönh. Gen. Curc. v. p. 532 [1].

Hab. MEXICO [1], Puebla, Izucar, Vera Cruz, Playa Vicente, Cosamaloapam (*Sallé*), Cordova, Almolonga, Tapachula (*Höge*), Cuernavaca in Morelos, Atoyac in Vera Cruz (*H. H. Smith*), Temax in North Yucatan (*Gaumer*); BRITISH HONDURAS, R. Hondo, R. Sarstoon, Belize (*Blancaneaux*); GUATEMALA. Panzos, Chacoj, San Juan, Cubilguitz,

and San Gerónimo in Vera Paz, El Tumbador, El Reposo, Volcan de Atitlan, Pantaleon, Capetillo (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Costa Rica (*Van Patten*), Volcan de Irazu 6000 to 7000 feet (*Rogers*); Panama, Bugaba, Volcan de Chiriqui, Tolé, Taboga Island (*Champion*).

The fine series before me of this species does not exhibit much variation except in size, and in the dentation of the posterior femora. The thorax is sometimes entirely black, sometimes red along the middle.

B. mexicanus is the only one of our species that has two teeth on the posterior femora of the male: this character is, however, subject to variation. The basal tooth is sometimes very long, rarely it is entirely absent; specimens may be found in which it exists only as a minute granule; the size of this tooth is, to a great extent, correlative with that of the indvidual, and it is only in the smallest examples that it is completely wanting.

It seems highly probable that *Brenthus peninsularis*, Horn, from Lower California, belongs to the same species.

6. **Brenthus difficilis.**

Brenthus difficilis, Boh. in Schönh. Gen. Curc. v. p. 530[1].

Niger; elytris flavo-lineatis, interstitio quarto linea valde elongata basali, interstitio tertio linea brevi subapicali.
Long. 16–48 millim.

Hab. Mexico[1], Etla, Toxpam, Juquila (*Sallé*), Mochitlan in Guerrero (*Harford*), Omilteme in Guerrero (*H. H. Smith*).

This species seems to be rare; it may be readily distinguished from *B. mexicanus* by the absence of the outer yellow stripe of the elytra, and by the hind femur of the male having only a single tooth. The groove on the prothorax is distinct only on the basal half; there is sometimes a yellow spot on the eighth interstice about one-third of the length from the shoulder. In size *B. difficilis* varies greatly: of a magnificent pair from Toxpam the male is 48 millim. long, and the female about 40; all the other individuals, twelve in number, are very much smaller, and one or two attain only 16 millim.

7. **Brenthus rufescens,** sp. n. (Tab. III. fig. 4, ♂.)

Rufus, subtus rufo-niger; pedibus nigro-variegatis, antennis nigris; prothorace antrorsum transversim rugoso, sulco dorsali integro.
Long. 35–42 millim.

Hab. Costa Rica, Volcan de Irazu 6000 to 7000 feet, Rio Sucio (*Rogers*).

This insect is readily distinguished from the allies by the unicolorous upper surface, and by the thorax being sulcate from the base to the apex. The antennæ are black; the legs are black in larger part, but both femora and tibiæ are red, to a greater or less

extent, in the middle. The sculpture of the elytra differs very little from that of *B. difficilis*.

Two specimens.

8. **Brenthus guatemalenus,** sp. n.

Niger; prothorace rufo-variegato; elytris flavo-lineatis, interstitio quarto linea basali brevi, interstitio tertio linea apicali valde elongata.

Long. 12–50 millim.

Hab. GUATEMALA, San Juan in Vera Paz, El Tumbador, Cerro Zunil, Pantaleon, Capetillo, Zapote (*Champion*).

This species differs from *B. difficilis* in having the thorax red along the middle of the upper surface, and also at the sides for a considerable part of the length. In addition to this, the relative lengths of the two yellow lines are reversed, the one on the fourth interstice being short, while that on the third is very elongate. The fine channel on the anterior part of the thorax is moderately distinct in the male, but is not present in the female, except in a very indistinct, obsolete manner; the basal portion of the thorax is broadly grooved in both sexes.

We have received a series of about seventy examples of this insect; the elytral marks are quite constant.

9. **Brenthus variegatus,** sp. n.

Niger, rufo-variegatus; elytris ad latera rufis ad suturam nigris, flavo-lineatis, interstitio quarto linea brevi basali, interstitio tertio linea elongata apicali.

Long. 10–36 millim.

Hab. GUATEMALA (*Sallé*), San Juan and Purula in Vera Paz, San Lucas Toliman, Capetillo, Zapote (*Champion*), Coban (*Conradt*).

Readily distinguished by the variegate elytra, the whole of the outer part of each of which is red, only the sutural portion between the yellow lines being black. The thorax above is in larger part red, beneath in larger part black.

Forty-one specimens.

Had we not received such good series of this insect and of *B. guatemalenus*, I should have treated *B. variegatus* as merely a colour-variety; but as we have not at present any intermediate examples, I think it best to regard the two as distinct. The larger part of the series was obtained at San Lucas Toliman by Mr. Champion, and no specimens of *B. guatemalenus* were met with there. At Capetillo and Zapote both forms were obtained.

10. **Brenthus chiriquensis,** sp. n.

Nigerrimus; elytris flavo-lineatis, interstitio quarto linea brevi basali, interstitio tertio linea valde elongata apicali.

Long. 12–42 millim.

Hab. NICARAGUA, Chontales (*Belt, Janson*); COSTA RICA (*Sallé*), Caché, Volcan de Irazu (*Rogers*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Of this insect we have also received a good series of about thirty examples. I see nothing to distinguish it from *B. guatemalenus*, except the total absence of red colour from the surface; it appears to occur only in the more southern divisions of our region, while *B. guatemalenus* and *B. variegatus* are confined to Guatemala. I have selected geographical terms for the trivial names, as I cannot but think that these forms may be proved to be merely races of one species; indeed, I am extremely surprised at the absence of intermediate forms.

11. **Brenthus multilineatus,** sp. n.

Nigerrimus; elytris flavo-lineatis, interstitio quarto linea elongata aliaque brevi, interstitio tertio lineis duabus mediocriter elongatis.

Long. 11–22 millim.

Hab. GUATEMALA, Cubilguitz in Vera Paz (*Champion*); PANAMA, Chiriqui (*Ribbe*).—COLOMBIA, Bogota (*coll. Sharp*).

We have received from each of the localities only one example of this species; they are males, one of them of the smallest size. It differs from *B. chiriquensis* by the fact that the third and fourth interstices are each marked with two yellow lines, instead of one; the third has a rather short yellow line on the middle, and another somewhat longer line behind it; the fourth has a long line extending from the base to near the middle, and just behind the middle a short line forming a splice with the two lines on the third interstice. In addition to this distinction, *B. multilineatus* has the base of the thorax less rounded at the sides.

The male individual from Bogota agrees with the specimen from Guatemala, except that it is larger, being 29 millim. long. It is possible that this insect may be a variety of *B. unidentatus*, Kirsch; but that name is not available, there being a prior *B. unidentatus* described by Perroud.

§ 2. *Prothorax not sulcate along the middle.*

12. **Brenthus clavipes,** sp. n. (Tab. III. figg. 5, ♂; 5 *a*, anterior leg.)

Niger, nitidus; elytris linea elongata prope suturam lineaque valde abbreviata in margine laterali flavis, prope suturam quadristriatis, externe seriatim subtiliter punctatis; femoribus crassis, basi abrupte pedunculata.

Long. 11–15 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2500 to 4000 feet, Tolé (*Champion*).

Antennæ short and thick. Head considerably narrowed behind. Thorax broad behind, a good deal narrowed towards the front, black and shining. Elytra short, each with four fine striæ near the suture, and externally with series of very fine punctures; the third interstice is yellow on the apical portion, the fourth from the

base to three-fourths of the length, and the eighth for a short space on the middle, the ninth is also yellow on a short raised portion quite at the extremity. The femora are remarkable for the abrupt and great dilatation of the apical part as compared with the basal portion; each one bears a small sharp tooth. The tibiæ are compressed and sublaminate, somewhat thicker in the middle; the front one, on the inner margin about the middle of the length, with a sharp tooth.

In the male the antennæ are median in their insertion, the prorostrum is short and broad, much dilated towards the tip, deeply canaliculate for half its length; the abdomen vaguely depressed along the middle.

In the female the antennæ are inserted very near to the eyes, and the prothorax is a good deal shorter than it is in the male.

Ten specimens.

13. **Brenthus quadrilineatus,** sp. n. (Tab. III. fig. 6, ♀.)

Niger, nitidus; elytris lineis duabus elongatis flavis, prope suturam striis duabus impunctatis, duabusque punctatis, externe seriatim punctatis.

Long. 11–15 millim.

Hab. Mexico, Toxpam (*Sallé*), Bobo (*Höge*); Nicaragua, Chontales (*Janson*).

This insect is very closely allied to *B. clavipes*, but may be distinguished from it by the elongate yellow line on the eighth interstice, and by the less obsolete punctures on the elytra. Besides this, it is a narrower insect, with the femora much less clavate, and the tooth on the front tibia less definite; the tibiæ, too, are less laminate.

Four specimens.

14. **Brenthus sculptipennis,** sp. n.

Angustus, parum elongatus, niger; elytris linea et puncto flavis ornatis, fortius punctatis, interstitiis carinatis; tibiis anticis intus haud dentatis.

Long. 11–17 millim.

Hab. Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui (*Champion*).

Thorax much narrowed in front, with traces of an obsolete channel on the basal part. Elytra rather depressed, narrow, with a very short yellow mark near the apex of the third interstice, and with the fourth interstice yellow from the base to two-thirds of the length, this yellow colour at the base spreading a little at the sides; the sculpture is remarkably definite and coarse, the first stria is impunctate, the second and third are punctate, the outer striæ are very coarsely punctured, so that the interstices are carinate. The front tibiæ are straighter than usual, and have no trace of a tooth on their inner edge. The femora each bear a small sharp tooth; they are moderately clavate, the more slender part broadly impressed on the outer face.

B. sculptipennis bears a considerable resemblance to the small individuals of *B. mexicanus*; it is very distinct, however, not only by the absence of sulcation on the prothorax,

but also by the unidentate hind femora, and by the coarser sculpture of the elytra and their different markings. The male has the metarostrum cylindric, without any trace of the lateral sinuate carinæ so conspicuous in the commoner insect.

15. **Brenthus laticornis,** sp. n. (Tab. III. fig. 7, rostrum and base of antenna, ♀.)

♀. Angustus, parum elongatus, niger; elytris linea flava elongata, juxta suturam sulcatis, externe seriatim fortiter punctatis; antennis latis, articulo basali superne late impresso.

Long. 14–18 millim.

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba (*Champion*).

We have received only two female examples of this species; though very similar to *B. sculptipennis*, it is undoubtedly distinct. The antennæ have the basal joints unusually thick, and the first one has a large depression on its upper face. The fourth interstice of the elytra appears to be yellow from the base to the apex; this colour does not, however, extend to the apex, for on the terminal portion of the elytron the third and fifth interstices join together behind the end of the fourth, and this double interstice is yellow; the colour is, however, not quite continuous with that of the fourth interstice. The first stria next the suture is impunctate; outside the striæ there are series of deep, moderately large punctures. The front tibiæ are not dentate internally. The tooth on each femur is distinct and sharp.

Group **NEMOCEPHALINA.**

NEMOBRENTHUS, gen. nov.

Caput elongatum, posterius haud truncatum, sed a thorace sat profunde divisum, oculis a thorace distantibus; antennæ crassiusculæ, articulis tribus ultimis clavam perparum discretam formantibus. Pedes crassi, tarsis brevibus.

I propose this genus for an insect that appears to be intermediate between the "Brenthides vrais" and the Nemocephalides of Lacordaire, the head being separated from the bulbiform neck by a moderately deep constriction, but only very feebly truncate behind; this would, perhaps, allow the genus to be placed in the Brenthides vrais, but the sculpture, general outline, and details of structure are so similar to some of the Nemocephalides that one is led to suppose the genus to be very near to the glabrous *Nemocephali*. Only the male is known. The antennæ are thick, the ninth and tenth joints equal, distinctly longer but not broader than those preceding; the terminal joint acuminate, nearly as long as the two preceding. The prorostrum is shorter than the metarostrum, and both parts are shaped as in *Nemocephalus*. The head is formed like that of *Nemocephalus*, but on the upperside is separated from the neck by a deeper constriction; this constriction does not exist on the under surface. The legs are broad, subcompressed; the femora compressed at the base, not pedunculate; the tarsi are broad and short, the third joint feebly lobed, the first joint a little

longer than the second. Basal ventral segments extremely elongate, without trace of division. Apices of the elytra not prolonged.

It is probable that *Brenthus sublævis*, Boh., belongs to this genus.

1. **Nemobrenthus æneipennis**, sp. n. (Tab. III. fig. 8.)

Piceus, elytris cupreis vel viridi-cupreis, bisulcatis, antennis nigricantibus; glaber, tantum ad rostri latera punctis paucis impressis.

Long. 12–24 millim.

Hab. Panama, Volcan de Chiriqui, David (*Champion*).

This insect is remarkable for its freedom from punctuation; on each of the lateral faces of the rostrum there are from six to twelve large punctures, in some of which, if not in all, there may be detected a very minute curved seta; the under surfaces of the head and rostrum are quite impunctate, but on the middle of the head there is a definite, deep fovea, connected with the base of the head by a very distinct channel; the surface is not polished, but exhibits a silky opacity. On the upper face the head and rostrum are more polished; in front of the insertion of the antennæ there is a very deep broad channel. The thorax is very long, curved at the sides, and much narrowed in front, deeply and broadly sulcate. Elytra of a shining metallic colour, definitely bisulcate near the suture, the apical impressions very coarsely rugose. Breast and abdomen not sulcate, the former with a small fovea in the middle behind; apical ventral segments not punctate, except on the hind margin of the last plate. Second and third joints of the tarsi broadly and deeply impressed on their upper surfaces.

The two individuals obtained of this species differ remarkably in size; the large individual has the wing-cases brassy, while in the smaller one they are metallic green.

In the collection at the British Museum there is a specimen belonging apparently to this species labelled "Amazones."

NEMOCORYNA, gen. nov.

Antennæ mediocres, articulis tribus clavam gracilem formantibus. Caput elongatum, a collo vix separatum. Pedes sat graciles; femoribus pedunculatis, parum elongatis; tarsis sat gracilibus.

This genus is proposed for two species, of each of which we have received a single example of the male sex. Were it not for the form of the antennæ these insects might be placed in *Nemocephalus*; the organs in question have the three terminal joints strongly different from the preceding joints in both form and clothing (Tab. III. fig. 10*a*), so that these insects had better be placed in a distinct genus. Joints 1–8 of the antennæ are polished and bear a few long setæ, while joints 9–11 are very densely punctured, dull, and provided with a minute dense pubescence. There is only an extremely vague depression to separate the head from the neck. I have seen several allied forms from Brazil, but in none of them does the ninth joint of the antennæ differ greatly in form and sculpture from the eighth, so that not any of them can enter the genus. The two

species differ a good deal in the length and slenderness of the legs, but not to such an extent as to render it necessary to place them at present in different genera.

1. **Nemocoryna godmani,** sp. n. (Tab. III. fig. 9.)

Nigra; capite thoraceque opacis; elytris versus suturam bistriatis, linea flava interrupta ornatis, externe seriatim punctatis, ad latus linea altera valde abbreviata; pedibus gracilibus.

Long. 18 millim.

Hab. PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).

Antennæ with elongate club, very different from the preceding joints. Prorostrum polished; metarostrum sulcate for its whole length above; head narrowed behind the prominent eyes, the line of separation from the neck very slightly marked; side of the head with three very large punctures; sides of the metarostrum with numerous very large, almost confluent punctures, bearing a few very fine setæ; under surface of the head and prorostrum polished, bearing two series of very large punctures, the central fovea very deep and definite, connected with the base by a fine channel. Thorax rather slender, much narrowed in front, the median groove a little abbreviate in front; the surface dull, impunctate. Elytra with two grooves near the suture, which are not very broad, but extend quite to the base; outside the grooves there is an elongate yellow line interrupted behind the middle; outside this there are distinct series of punctures; the carinæ of the declivity are remarkably abrupt. The legs are slender, the apical calcar of the front tibia very prominent. The breast and abdomen are not sulcate.

Only one example was found of this very elegant and distinct Brenthid.

2. **Nemocoryna sericata,** sp. n. (Tab. III. figg. 10; 10 *a*, antenna.)

Chocolatina; capite thoraceque opacis; rostro canaliculato, ad latera parcissime setoso; elytris dilutioribus, nitidis, impunctatis, ad suturam bisulcatis.

Long. 17 millim.

Hab. PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).

Head and rostrum impunctate above; metarostrum with a fine channel on the middle extending all its length, and behind the eyes represented by two or three interrupted faint depressions; between the insertion of the antennæ, on the pterygia, there is a faint elevation, over which the channel is continued; in front of the pterygia it expands into a broad, deep, and elongate depression; sides of the metarostrum with a few coarse punctures, each bearing a curvate seta. Underneath, the base of the head is impunctate, and the median fovea is connected with the base by an almost imperceptible channel; in front of this are coarse irregularly-placed, not very numerous punctures, extending nearly as far forwards as the pterygia. The thorax is elongate, and though dull it has no punctuation. The elytra have two definite sutural grooves, and the suture is darker in colour than the other parts. The tibiæ are not lamellate, but rather slender. The breast and abdomen are not sulcate.

The only specimen of this species was much covered with the grease and verdigris that are unfortunately of such common occurrence in pinned Brenthidæ: possibly, therefore, the colour of the elytra is not quite natural.

NEMOCEPHALUS.

Nemocephalus, Latreille, Dict. Class. d'Hist. Nat. xiv. p. 693 (1804); Lacordaire, Gen. Col. vii. p. 462.

Nematocephalus, Gemminger & Harold, Cat. Col. ix. p. 2718.

This genus includes ten or twelve species found in tropical America; it was formerly more extensive, but the next genus, *Acratus*, has been separated from it by Lacordaire; the line of division between the two is, however, at present rather arbitrary, depending as it does chiefly on the lengths of the antennæ and tarsi, which differ much from species to species.

1. **Nemocephalus femoratus**, sp. n. (Tab. III. fig. 12, ♂.)

Niger, nitidus; thorace polito, fere impunctato; elytris unisulcatis, seriatim sat fortiter punctatis.
Long. 9–18 millim.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), El Reposo, Paraiso (*Champion*).

Male. Rostrum moderately long, its upper surface and that of the head polished and only sparingly punctate, the sides thick, coarsely punctate, opaque, with a few curved setæ; head beneath and the base of the metarostrum very coarsely punctate, the latter with a large, deep fovea in the middle, connected by a fine channel with the base of the head; anterior part of the metarostrum and pterygia longitudinally bi-impressed, carinate between the impressions. Abdomen deeply and broadly impressed, somewhat coarsely punctate. Base of the hind femur very broad at its trochanteral articulation, bearing above a compressed lamina. On the elytra the interval concealed in the groove near the suture is very indistinct in the middle part of the length; the serial punctures are distinct and regular.

The female has a few punctures on the upper surface of the head and metarostrum, the latter has also vague, elongate impressions along the middle; the hind femora are without any lamina.

The small males have both the head and rostrum short; in the large males the latter is a good deal expanded at the tip, but not in the small males. Both sexes vary much in size.

The late Mr. Neville Goodman found a *Nemocephalus* in the Amazons Valley that is very closely allied to *N. femoratus*, but apparently distinct; it is interesting as being a connecting-link between the species with one and those with two grooves on the elytra. In the collection at the British Museum there is a species from Bogota,

apparently closely allied to *N. femoratus*, labelled "*glabratus*, Fabr." *N. glabratus* has, according to Schönherr, bisulcate elytra.

2. **Nemocephalus guatemalensis.** (Tab. III. fig. 11, ♀.)

Nematocephalus guatemalensis, Senna, Bull. Soc. Ent. Ital. xxv. p. 128, t. 1. fig. 4[1].

Hab. Mexico, Playa Vicente (*Sallé*), Cordova, Las Vigas (*Höge*); Guatemala[1], Yzabal (*Sallé*), Tapachula (*Höge*), San Gerónimo, Chacoj, and Teleman in Vera Paz (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui (*Champion*).

This insect is on the upper surface very similar to *N. femoratus*, but the punctuation of the elytra is quite obsolete, and this character suffices to distinguish both sexes from *N. femoratus*. On the under surface of the rostrum and head of the male *N. guatemalensis* is very different from *N. femoratus*, owing to the dense, fine punctuation and pubescence. The species varies a good deal in numerous minor characters; the individuals are usually of an intense black colour, but picescent specimens occur, and the examples described by Dr. Senna were of this colour. In both sexes the elytra are more distinctly bisulcate than in *N. femoratus*. The male has no trace of any femoral lamina.

3. **Nemocephalus punctulatus.**

Brenthus (*Nemocephalus*) *punctulatus*, Boh. in Schönh. Gen. Curc. v. p. 544[1].

Hab. Mexico (*coll. Chevrolat*[1]).

I judge from the description that this species is allied to *N. femoratus* and *N. guatemalensis*, but the body beneath is said to be closely and deeply punctured. We have not received specimens of any species agreeing with this description, and there was no insect standing with this name in the Sallé collection. In the British Museum collection there is a specimen labelled "*N. punctulatus*, Mexico"; it appears to be an extremely small male of *N. guatemalensis*. I do not think this could belong to the species described by Boheman as *N. punctulatus*.

4. **Nemocephalus deplanatus,** sp. n.

Subdepressus, piceus, politus; oculis prominulis; elytris seriatim regulariter subtiliter punctatis, medio versus suturam evidenter bisulcatis.

Long. 11 millim.

Hab. Nicaragua, Chontales (*Janson*).

We have received only one individual, a male, of this species. On the upper surface it is extremely similar to some of the varieties of *N. guatemalensis*, but it is very distinct by the sculpture of the under surface of the head and rostrum. The head and rostrum bear comparatively few hairs, and the former has fewer punctures; these on the metarostrum become seriate, so that on each side there is a series of large confluent

punctures, the two series being separated at the base by a broad, median, smooth space which soon narrows into a carina. The abdomen is feebly impressed for all the length of the two very polished and long basal segments. There is no trace of a femoral lamina, but on the underside of the femora near the base there is a remarkably definite channel; in *N. guatemalensis* this is only indefinite. On the upper surface the quite evident, though fine, series of punctures on the elytra are sufficient to distinguish *N. deplanatus* from its congener.

5. **Nemocephalus puncticeps,** sp. n.

Piceus, minus nitidus; capite dense punctato; elytris late profundeque unisulcatis, seriatim fortiter punctatis, interstitiis paululum elevatis.

Long. ♂ 17–28 millim., ♀ 16–18 millim.

Hab. Mexico (*Sallé*), Cerro de Plumas (*Höge*), Temax in North Yucatan (*Gaumer*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Teleman (*Champion*); Nicaragua, Chontales (*Belt, Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Male. Upper surface of the head and rostrum with numerous very evident punctures, shining. Thorax dull, distinctly punctate. Elytra with series of large punctures closely placed, so that both the longitudinal and transverse interstices are narrow and somewhat elevated. The sculpture of the under surface of the head is at the base, close to the neck, remarkably rugose and deep, so that the central fovea is rendered indistinct; it, however, exists rather remote from the base, with which it is connected by a fine channel; anterior to this the punctuation is dense and coarse but not rugose, set with numerous curvate setæ, carinate along the middle. Basal abdominal segments deeply sulcate for all their length; terminal segment with fine, rather long hair. Femora not impressed, abruptly clavate.

Female with the upper surface of the head and metarostrum densely punctate; their under surface dull, somewhat velvety, and the coarse sculpture thus made somewhat indistinct.

The South-American *N. obtusus*, Lund, has a broad groove on the elytra, and resembles *N. puncticeps* in appearance, but the dense punctuation of the head of *N. puncticeps* is wanting in *N. obtusus*.

ACRATUS.

Acratus, Lacordaire, Gen. Col. vii. p. 463 (1866).

This genus, formed at the expense of the older genera, *Nemocephalus* and *Teramocerus*, includes at present ten or twelve species, all from tropical America.

1. **Acratus chontalensis,** sp. n. (Tab. III. figg. 13, ♀; 14, ♂; 14 *a*, hind tarsus, ♂.)

Nigricans, supra rufo-brunneus vel brunneus, opacus; capite et prothorace antice et postice transversim rugosis; elytris seriatim regulariter punctatis, versus suturam bistriatis.

Mas. Rostro perelongato, subtus hirsuto; prothorace lateribus undulatis, undique transversim rugosis; elytris apice longius bidentatis.
Long. 43 millim.
Fem. Rostro polito, cylindrico; prothorace fere simplici; elytris apice brevissime bidentato.
Long. 30 millim.

Hab. NICARAGUA, Chontales (*Janson*).

The male of this species is a very remarkable insect, having an irregular outline of the sides of the thorax, and the flanks covered with transverse wrinkles. The head is very slender, its sculpture recalls that of the genus *Rhyticephalus*; besides the transverse wrinkles, it bears small granular tubercles. The rostrum of the male is very elongate, dull, quadrangular, flat above and at the sides, and without sculpture; the lower face is densely punctate and set with short setæ, strongly carinate along the middle. The under surface of the head is wrinkled in the male, and obsoletely so in the female; it is finely canaliculate from the base to near the back of the eyes, where there is a very narrow fovea; in the female the metarostrum is biseriately punctate and setigerous. The line of suture between the two elongate abdominal segments is distinct in both sexes; the abdomen is not sulcate. The elytra are of a dull brown or red-brown colour, with, in certain lights, a green or metallic tinge, the suture is blackish; the series of punctures are very regular and not small, though only obsoletely impressed; the two striæ along each side of the suture are deep and narrow, and extend quite to the base; the narrow interval between them, at the apex, becomes an ordinary interstice. The legs are between black and red in colour, the outer surface corresponding more than the other surface with the colour of the under part of the body.

Two specimens.

2. **Acratus apicalis,** sp. n.

Gracillimus, niger, supra opacus, lævigatus; elytris versus suturam bistriatis, stria externa anterius abbreviata; apicibus muticis.
Long. 19–39 millim.

Hab. NICARAGUA (*Sallé*), Chontales (*Belt, Janson*).

This elegant insect is distinguished by the impunctate surface and unspined apices of the elytra. The male is excessively variable in size; the head and rostrum are nearly as elongate as the rest of the body, impunctate, the rostrum quadrangular, without hair beneath, the median fovea rather small; the upper surface of the head with some indistinct transverse wrinkles. The thorax is slender and very long, quite impunctate, with one or two obsolete transverse wrinkles in front. Elytra very slender, the apices unarmed, but the apical part prolonged, and forming a strong contrast in sculpture to the anterior portion, being coarsely transversely rugose between the carinæ. The lower surface is more shining than the upper, but is not sulcate. The tarsi are only of moderate length.

The wrinkles on the head and thorax become obsolete in the small males, which also

have the third joint of the antennæ less elongate. When the elytra are looked at from the sides they appear a little shining, and have a faint metallic tinge. The female resembles the male in colour and sculpture; it has the metarostrum sulcate.

Of the five specimens of this species, the four males were found by Belt and Janson; the single female comes from M. Sallé's collection, where it was not accompanied by any male, but there can be no doubt that all the specimens belong to one species.

3. **Acratus filum,** sp. n. (Tab. III. fig. 15, ♂.)

Gracillimus, niger, supra ænescens; femoribus basi, tibiis, tarsis antennisque plus minusve flavescentibus; elytris impunctatis, bistriatis, stria externa anterius valde abbreviata, apicibus acuminatis.
Long. 27 millim.

Hab. British Honduras, R. Hondo (*Blancaneaux*).

Although very similar to *A. apicalis*, this species is very distinctly brassy on the upper surface, especially on the elytra, and is easily distinguished by the form of the apices of the elytra; the terminal portion of the wing-cases is prolonged and attenuate, and at the extremity divided into separate angles, which leave a small angular notch between them. There are one or two transverse wrinkles at the back of the head, and on careful examination of the under surface it is seen that the metarostrum is not absolutely glabrous, but bears on the sides behind a few very fine setæ. The terminal ventral segment is rather densely punctate, and bears much fine, rather long pubescence.

Two males.

The description of the Brazilian *Brenthus* (*Teramocerus*) *acutipennis*, Boh., corresponds in many respects with *A. filum*, but in *T. acutipennis* both of the two striæ on the elytra extend to the base.

Group **ITHYSTENINA.**

TERAMOCERUS.

Teramocerus, Schönherr, Gen. Curc. v. p. 556 (1840); Lacordaire, Gen. Col. vii. p. 465.

This genus has hitherto consisted of seven South-American species.

The insects I assign to *Teramocerus* differ, so far as the male is concerned, from *Acratus* by the great elongation of the basal joint of the hind tarsus, and by the two basal joints being carinate above. The female shows no trace of these peculiarities, and I see nothing to distinguish it from the corresponding sex of *Acratus*.

1. **Teramocerus belti,** sp. n. (Tab. III. figg. 16, ♂; 17, ♀.)

Mas. Gracillimus, nigricans, supra metallescens; elytris viridi-æneis, sutura purpurascente, apicibus acuminatis.
Long. 36 millim.
Fem. Rostro anterius, antennis tibiisque flavescentibus; antennis articulis 3° ad 8^{m} nigro-setosis.
Long. 14 millim.

Hab. Nicaragua, Chontales (*Belt, Janson*).

This species is remarkable for the excessive disparity between the sexes. Both have, however, in common, the remarkable colour and sculpture of the elytra, and this is sufficient to distinguish the species from all the other Brenthids of our region; the elytra are of a beautiful silky metallic-green colour, with the suture purplish red, and they have series of fine subobsolete punctures, and along the suture two striæ that are not abbreviate in front. The rostrum of the male is densely covered with hair beneath, its upper surface is remarkable in being raised along the middle, so as to be bisulcate; the head beneath is wrinkled, and the sides of the prosternum are granulate; on each side of the hind-margin of the first ventral segment there is a peculiar angular projection. The form of the angular processes by which the elytra are terminated varies somewhat.

Four males; one female.

A specimen of this species labelled "*Teramocerus crœsus*, Lac. MS., Cayenne," exists in the British Museum collection.

2. **Teramocerus** —— ?

Hab. NICARAGUA, Chontales (*Janson*).

We have received a fragmentary female of an insect that renders it clear there is a second species at Chontales closely allied to *T. belti*, but having the outer of the two sutural striæ abbreviated in front, and the antennæ in the female less hirsute.

Subfam. *ULOCERINÆ*.

ULOCERUS.

Ulocerus, Dalman, Ephem. Ent. p. 25 (1824); Lacordaire, Gen. Col. vii. p. 474.

This genus has hitherto consisted of six South-American species, all of which are apparently rare. It is very difficult to distinguish the species of *Ulocerus*; they seem to be very closely allied to one another.

1. **Ulocerus laticornis,** sp. n. (Tab. III. figg. 18; 18 *a*, profile of the apices of the elytra.)

Angustus, fusco-squamosus, subtus pallidus; elytrorum dorso vage albido-signato; antennis latis, densissime squamosis, articulo tertio secundo duplo latiore.

Long. 16 millim.

Hab. NICARAGUA, Chontales (*Belt*).

Antennæ broad and short, the third joint dilated, from this to the seventh joint they become gradually narrower; the basal parts are dark fuscous, the seventh and eighth joints paler, the small apical joint almost black. Head and rostrum elongate and slender, densely squamose, finely canaliculate. Thorax much longer than broad, transversely constricted near the front, the surface irregular in consequence of raised

tufts. Elytra elongate and narrow, with series of punctures made obscure by the clothing, fuscous, with vague white markings, the apical margins expanded by means of protruding pallid scales; the male just above the apex with two long squamose protuberances, the female with two small tubercles instead. Under surface and legs more pallid than the upper surface, nearly white; rostrum, however, as dark beneath as above.

Three specimens.

Allied to *U. pannosus*, Boh., but smaller, with the head shorter and less lobed behind.

2. **Ulocerus sordidus,** sp. n.

Angustus, squalide fusco-squamosus; antennis latiusculis, haud difformibus.
Long. 9 millim.

Hab. Panama, Bugaba (*Champion*).

A very narrow insect, of which we have received only one male example. The head is short and rather broad, the eyes small and but little prominent. The antennæ are covered with very coarse, seta-like scales arranged in whorls and subdepressed; joints 1–6 are rather dark fuscous; the seventh and eighth joints are more pallid; the ninth is small, acuminate, dark, but not black, its clothing fine, not coarse like that of the preceding joints. Thorax long and narrow, very densely squamose, its surface a little uneven. Elytra very narrow, like the thorax extremely densely squamose; the sculpture (which is probably coarse and deep) concealed by the clothing; each apical angle squamose, the tubercle above the apex indistinct.

3. **Ulocerus mexicanus,** sp. n.

Angustus, pallide fusco-squamosus, in elytris squamis erectis nigro-fuscis vestitus; antennis fere gracilibus.
Long. 8 millim.

Hab. Mexico, Playa Vicente, Cordova (*Sallé*).

This insect is very closely allied to *U. sordidus*, but the head is of a different shape, being longer and narrower, with the eyes more exposed from above; the antennæ are not so broad, and the erect squamosity on the elytra is more distinct. The form of the elytral apices is much the same as in *U. sordidus*, there being only a small tuft above the prominent apical angles; the two sexes are similar in this respect. The antennæ have the basal joint rather long; the rostrum, head, and thorax are sulcate along the middle, the back of the head exhibits very little lobing of the angles. The lower surface is paler than the upper; the legs are slender.

Three specimens.

Fam. SCOLYTIDÆ *.

The species of Scolytidæ herein recorded from Central America amount to about 270, equalling one-fourth of the whole number previously described from all parts of the World. This total is capable of being greatly enlarged by future workers.

We have received few Scolytidæ except from Mr. Champion, and of those collected by him a large proportion are unique. Comparatively little knowledge has been gained of the Scolytid fauna outside those parts of Guatemala and Panama which Mr. Champion visited. An exception, however, must be made in the case of Mexico; a moderately large number of Scolytidæ have been obtained from the collection of M. Sallé. These consist chiefly of *Platypi*, which are of typical value, having all been examined and described by Chapuis.

The habits of Scolytidæ are very retired, and consequently these insects are difficult to collect without special search. More than one-half of the species here enumerated (Platypodides, Xylebori, Corthyli, and *Gnathotrichus*) are known, or may be confidently assumed, to be strictly xylophagous and not phlœophagous; such insects are hardly to be obtained except by chance. M. Grouvelle has forwarded me a large collection of Scolytids obtained in Paris from bales of Mexican and Brazilian tobacco. Though the original habitat of such specimens is always open to doubt, the collection contains numerous remarkable and as yet unknown forms, of which some at least must be Mexican.

A large proportion of unique examples greatly increases the difficulty of studying Scolytidæ. It is sometimes impracticable fully to determine the generic characters of obscure forms without dissection and microscopical examination; and this circumstance is responsible for the retention as a whole of certain genera of which division into two or more parts is desirable, and for the incomplete details which are all that can be given about certain species.

The genera into which these insects fall are either cosmopolitan, as *Platypus*, *Hylastes*, *Hypothenemus*, *Tomicus*, *Pityophthorus*, *Xyleborus*, or are of neotropical character. Of the latter, some, in the Camptoceri, Bothrosterni, and Corthyli, are represented by stragglers in North America, while others, *Tesserocerus*, *Chapuisia*, *Phlœoborus*, *Problechilus*, the Hexacolides, *Hylocurus*, *Amphicranus*, &c., so far as known, are rigidly Neotropical.

It is likely that the southward limit of many N.-American forms is determined

* By Walter F. H. Blandford.

by the distribution of the Coniferæ, which do not extend further south than Nicaragua.

The richest subgroups are the Platypi and Corthyli, represented each by some fifty species. The latter includes many of the most remarkable and highly-specialized forms found in the region.

My especial thanks are due to M. Severin, of the Brussels Museum, and Herr Ganglbauer, of the Vienna Museum, who have freely placed at my services the types of Chapuis and Ferrari, respectively under their care. I also have to thank Dr. Horn, Mr. A. D. Hopkins, and Mr. H. F. Wickham for numerous examples of N.-American species.

Unfortunately, many species described from the United States by Leconte and others are still unknown to me, and the published descriptions are too terse and based too exclusively on points of difference between congeners to afford any safe guide to the identification of Neotropical forms. Brief descriptions of Scolytidæ are not of the slightest use, except when dealing with a limited and tolerably familiar fauna, and those of Eichhoff, which can be safely followed even without types, are models of full and accurate definition.

The fact that in some genera I have had before me types of almost all the known species has induced me to extend my account of them by giving descriptions of a few forms not yet found within our limits, or by including all described species in the analytical Tables. The genera selected for extended treatment are Neotropical, and such as can be treated in tolerably complete detail with the assistance of previous descriptions. Examples will be found in *Phlœoborus*, *Cnesinus*, *Hylocurus*, &c., the names of species not recorded within our region being given in square brackets.

Secondary Sexual Characters.

In Scolytidæ almost every part of the external skeleton may be structurally modified to present secondary sexual characters, correlated, not merely with the functions of recognition and coition, as is so often the case, but with the parts played by one or the other sex in burrowing and oviposition. To the latter functions is probably due the greater development of the scape in the females of *Tesserocerus* and *Crossotarsus*, and of the club in those of *Corthylus*; and the unsuspected existence of such female characters has caused much confusion in the description of species, of which the sex had not been made out by dissection.

The genitalia have been examined in many European species by Lindemann (Bull. Soc. Mosc. xlix. 1, pp. 196–252), but without discussion of the secondary sexual characters.

Recently Mr. Hopkins has published an account (Canad. Ent. xxvi. pp. 274–280) of

the secondary characters in 37 N.-American species, after careful dissection of the genitalia.

He has been led to reverse many of those given by previous authors, and summarizes his conclusions thus: "While the external sexual characters appear to be constant with the species in some genera, in others no particular character is possessed by all of the species. In fact, what may be a good male or female character in one species will be reversed in another species of the same genus." The former statement is quite true, but if the latter be so, an insuperable difficulty is thrown in the way of descriptive writers, who cannot examine the genitalia of more than a small proportion of exotic species.

Secondary characters are by no means universal; they have been overlooked or are entirely absent in such genera as *Cryphalus*, *Hypothenemus*, and *Hypoborus*, and many Hylesinids. In the Xylebori a special feature, not recorded in other subgroups, prevails, the males being dwarfed, subapterous, and otherwise structurally altered; in the following remarks they are excluded from consideration.

By the expression that such characters are found in any specified organ of a particular sex and species, it is meant that that organ varies in structure from the type common to the genus, group, or family, and existing in the opposite sex.

The most frequent of such characters are:—

Front. Less convexity, flattening, or actual excavation; the presence of a polished plaque, tubercles, or carinæ.

Denser or longer pubescence or villosity; the presence of fasciculated hairs.

Antennæ. Greater development of the scape or club; elongation of the funiculus. Presence of cilia or fimbriæ on any part.

Elytra. Stronger armature; greater depth of the apical excavation or sulci, or at least flattening of the apex.

Abdomen. Flattening or greater concavity; the presence of armature.

Secondary characters are also found in the mouth-parts, tibiæ, &c., but are not yet known to be of common occurrence.

In the subjoined Table (pp. 84–85) are analyzed the chief secondary sexual characters of about 80 species belonging to 28 genera, in which they have been correctly applied after dissection by Lindemann, Eichhoff, Hopkins, or myself. The species in which they have been determined is not given, as a rule; and it is intended to imply not that such characters are common to all species of a group or genus, but that when present they are confined to one sex without *proved* exception, unless such be mentioned.

Group.	Genus.	Number of species examined, and authority.	Frontal characters.	Antennal characters.	Elytral characters.	Characters of other organs.
[**SCOLYTOPLATYPODIDES** (1)] ..	[Scolytoplatypus]	2. Blandf.	♂	♂	♂	
SCOLYTIDES	Scolytus (2)	3. Hopk.	♂	..	..	Abdomen: ♂.
		4. Blandf.				
	Camptocerus	2. Blandf.	♂	♂		
	Bothrosternus ..	1. Blandf.	♂			
	Pagiocerus	1. Blandf.	♂			
HYLESINIDES	Hylastes (2)	1. Hopk.	♂	..	..	Tibiæ fringed: ♂. Slight abdominal impression: ♂.
		Several. Eichh.				
	[Myelophilus (2)]	1.	..	..	♂	
	Dendroctonus ..	2. Hopk.	♂ (3)			
	Hylesinus	1. Hopk.	♂			
	Phlœosinus	1. Hopk.	..	..	♂	
		2. Blandf.				
	Phlœotribus	1. Hopk.	♂			
	Chramesus	1. Hopk.	♂			
HEXACOLIDES	Prionoscelis ...	1. Blandf.	♂			
	Hexacolus	1. Blandf.	♂	♂		
TOMICIDES	Tomicus	4. Hopk.	♂	..	♂	
		Several. Eichh.(4).				
	Xylocleptes	1. Eichh.	..	..	♂	
	[Pityogenes]	2. Lindem.	♀	..	♂	
		2. Eichh. (4).				
		1. Hopk.				
	Dryocœtes	2. Hopk.	♀			
	[Taphrorychus] ..	2. Eichh. (4) ..	♀	..	♂	
	Pityophthorus ..	Europ. spp. Eichh.(4)	♀	..	♂	
		[*confinis*], Hopk.	♀			
		[*minutissimus*], Hopk.	♂			

Group.	Genus.	Number of species examined, and authority.	Frontal characters.	Antennal characters.	Elytral characters.	Characters of other organs.
TOMICIDES (*continued*)	[Trypodendron] .	3. Hopk.	♂	..	.. {	Tibiæ and tarsi fringed: ♂.
	Gnathotrichus ..	2. Hopk.				
		1. Blandf.	..	♀	(5)	
	Pterocyclon	2. Hopk.	♀ (6)	♀	♂	
		2. Blandf.				
	Corthylus	2. Hopk.	♀	♀		
PLATYPODIDES (1).	Platypus	2. Hopk.	..	..	♂	Abdomen: ♂.
		Several. Blandf.				
	[Crossotarsus] ..	2. Blandf.	♀	♀	♂	Abdomen: ♂.
	Tesserocerus	2. Blandf.	..	♀	♂	

(1) The Scolytoplatypodides and Platypodides exhibit sexual differences in the mouth-parts, front, prothorax, and legs, which cannot be tabulated as being deviations from a simple type in one or the other sex.

(2) The habits of several species of these genera are so well known as to exclude the possibility of mistakes, even without actual dissection.

(3) The few additional hairs on the front of *D. terebrans* ♀ form an unimportant character "of little value" (Hopk.).

(4) The references are to the sexual determinations in Eichhoff's 'Die europäischen Borkenkäfer,' and not his 'Ratio Tomicinorum.'

(5) Sexual characters may be present in the elytra, but have not been definitely assigned.

(6) The front of *P. fasciatum* has a slight impression in the male, an unimportant exception.

This Table, which might be greatly lengthened by the inclusion of many genera and species in which the application of secondary sexual characters, though not ascertained by dissection, is hardly a matter of doubt, shows that such characters, exhibited by the elytra, are confined to the males, as far as is known. Till an exception be proved, elytral characters may therefore be assumed to be a *constant male character* throughout the Scolytidæ. The same applies to the less frequent abdominal characters.

Frontal and antennal characters appear, when well-defined, to be a constant distinguishing mark of the males in Scolytoplatypodides, Scolytides, Hylesinides, and Hexacolides. They change in the Tomicides, being a male characteristic in *Tomicus*, *Trypodendron*, and *Pityophthorus minutissimus*; and a female characteristic in other genera

and the large majority of *Pityophthori*. They are also diagnostic of the female in Platypodides. In a Holarctic genus of Hylesinides, *Polygraphus*, there is disagreement as to the external indications of sex, and further evidence on them is required. It therefore appears that in all Scolytids (except *Trypodendron*) known to be wood-borers, as well as in those Tomicids most nearly allied to them, such characters, as far as is known, are entirely female.

Two exceptions recorded—*Dendroctonus terebrans* (Oliv.) and *Pterocyclon fasciatum* (Say)—are of slight importance. The latter species is normal in all essential characters.

The one notable exception which lends credence to Hopkins's statement, that the characters may be reversed in species of the same genus, is *Pityophthorus minutissimus* (Zimm.).

This insect and its allies—*P. pubipennis*, Lec., *P. pilosulus*, Lec., &c.—present well-defined structural differences from most species of *Pityophthorus*. Though the genus has not yet been sufficiently studied to be subdivided, it is certainly composite, and in that rather than in the non-validity of the sexual characters within a genus must the explanation of this anomaly be found.

There are as yet no sufficient grounds for supposing that well-marked characters, such as an enlarged or ciliate antennal club, an excavate front, or more strongly spinous elytra, are not confined to the same sex within generic limits.

Terminology.

The expressions "outer" and "inner" have been used loosely by most writers to indicate indifferently the faces and the borders of the tibia or of a flattened antennal club.

In descriptions of the antenna the terms "outer" and "inner" are retained here for the faces of the club when flattened. If such an antenna is extended forwards from the head the *outer face* looks obliquely downwards, the *inner* upwards; the border of the club nearest to the middle line and to its fellow is the *lower* or *inferior border*; the opposite border, which is on the same side as the salient angle of the scapo-funicular articulation, is the *upper* or *superior border*.

In descriptions of the tibiæ the *outer face* is the posterior surface of the fore tibiæ, the anterior surface of the middle and hinder tibiæ, when the limbs are extended at right angles to the body-axis; the other is the *inner face*. The border which is continuous with the superior femoral border and is usually dentate is the *upper* or *superior border*, the other is the *lower* or *inferior border*.

I limit the term *striato-punctate* to such elytra as have the main rows of punctures feebly or indistinctly impressed; but when no impression whatever can be seen with

any illumination along the rows of punctures (except perhaps the sutural row) the elytra are termed *lineato-punctate*.

All measurements, comparative or absolute, have been made with the microscope and a micrometer. Such measurements, if reliable, are most valuable aids to identification.

Classification.

A classification of the Scolytidæ based upon the structural characters of all existing genera has yet to be carried out; and much difficulty has been experienced by writers in grouping these insects, owing to the fact that in Scolytidæ, more than in any other Coleoptera, the parts of the body which afford the best differential generic characters—the mouth-parts, antennæ, and legs—are often subject to great adaptive modifications among closely-allied genera and even species. This has led Lindemann to examine and employ for taxonomy such intimate structures as the armature of the proventriculus and of the male genitalia. These refinements, possible in the leisurely examination of abundant indigenous material, are out of place when dealing with a large exotic collection, and are unlikely to afford deep-seated characters. At present, after examination of representatives of almost every known genus, I do not see my way to classifying completely the Scolytidæ of the world; and in the grouping here adopted I have endeavoured merely to present some novel and, I believe, natural associations and to arrange the genera in a tolerably logical order. Nothing further is practicable till some stable and accurately definable characters are found to serve as a guide. Possibly such may occur in the exoskeleton, the examination of which, like that of the mouth-parts, is difficult and sometimes impossible without ample material.

The characters hitherto employed being subject to adaptive modifications, none can be regarded as possessing a constant uniform value throughout the family. The number of joints in the funiculus is sometimes constant throughout a group, at other times so inconstant, owing to degeneration and the suppression of sutures in small species, that it will scarcely serve as the test of a genus. Lǿvendal has shown that it may vary even in one and the same species. It is much easier to associate genera as possessing certain generally common features and habitus than it is to delimit the groups thus formed by the enunciation of any prominent constant character.

There is, however, one character which serves to separate certain groups, the importance of which has not been recognized. In the Cossonidæ the tibiæ are unarmed on the upper margin, but are produced at the apex above the tarsal articulation into a mucro, which is usually recurved. In the majority of Scolytidæ the tibiæ, armed on the margin, are not so produced; but in the Scolyti and Camptoceri the anterior pair is constructed precisely as in the Cossonidæ, while the middle and posterior pairs may show the existence of secondary teeth, in addition to a less prominent mucro.

In the Bothrosterni a tibial prolongation is also evident, but it is split at the apex into two, and a third tooth is present at its base, the structure thus approximating to that found in the Hylesinides.

In *Chapuisia*, a form of complex affinities, the tibial unguiculus is again evident: small on the hinder pairs, it is long and backwardly recurved on the front tibiæ, and though really situate above the tarsal articulation, this fact may be overlooked in careless examination. The tibiæ of the Platypodides are readily homologized with those of *Chapuisia*; the unguiculus, prominent on the anterior pair only, may assume a position apparently on the lower side of the tarsal articulation. This is due to a twisting of the tibia and of its prolongation, which I take to be strictly the homologue of the mucro of the Scolytides and Cossonidæ. The Platypodinæ, in which *Chapuisia* may be included, and which are easily separable by other equally important characters, are here removed from the position they usually occupy after the Tomicides to the neighbourhood of the Scolyti, with which they present various points of affinity.

No complete attempt has been made to define the differential characters between the Scolytidæ and the most nearly-allied genera of Cossonidæ (*Rhyncolus*, *Stenoscelis*, &c.). In many of the latter the development of the rostrum is as feeble as in the Scolytidæ, and the pygidium is not declivous. In Leconte and Horn's 'Classification of the Rhynchophora of North America' the pygidium is stated to be declivous in the Calandridæ (which include the Cossonidæ) and horizontal in the Scolytidæ, in which the terminal edge of the last ventral segment is acute and surrounds the last dorsal; but to both rules there are exceptions.

Nevertheless, the habitus of the Cossonidæ, the absence of elytral excavations or armature, and the rounded eyes will distinguish them without difficulty from such Scolytidæ as resemble them in tibial structure. Still it is noteworthy that even Chapuis has described an undoubted Cossonid, *Onychius*, among the Scolytidæ.

The Central-American Scolytidæ fall into two subfamilies:—

1. First tarsal joint (at least of the anterior pair) as long as the remaining joints united.
   Head not rostrate, not hidden by the prothorax; eyes rounded-oval, entire. Prothorax elongate, its flanks impressed before the base for the anterior legs. Anterior tibiæ with a long curved unguiculus at the upper apical angle, their outer face carinate or scabrous. Middle and posterior tibiæ shortly produced at upper apical angles . . . . . PLATYPODINÆ.
2. First tarsal joint shorter than the remaining joints united.
   Eyes oblong, oblong-oval, emarginate, or bipartite, but not rounded. Prothoracic flanks sometimes impressed at the base for the anterior legs. Anterior tibiæ rarely carinate or scabrous on the outer face; when this is the case, they are not produced into an unguiculus at the upper apical angle . SCOLYTINÆ.

Subfam. *PLATYPODINÆ.*

This subfamily has been extended to include *Chapuisia* in preference to making that genus the type of a distinct subfamily.

As here defined, it will not include the Scolytoplatypodides, none of which are found in the New World, and which must be regarded as a special subfamily or as a group to be placed in the Scolytinæ.

The Platypodinæ comprise two groups of unequal size:—

1. Antennal funiculus four-jointed; third tarsal joint simple . . . . . *Platypodides.*
2. Antennal funiculus five-jointed; third tarsal joint bilobed . . . . . *Chapuisiides.*

Group **PLATYPODIDES.**

Platypidæ, Chapuis, Monographie des Platypides, Mém. Soc. Liége, xx. (1866).

The fifty-one Central-American species contained in this group fall entirely into two genera—*Platypus* represented by forty-six, and *Tesserocerus* by five species. Of this number no less than thirty have been previously described, a larger proportion than has been the case with other genera of Scolytidæ. This is due chiefly to the assistance obtained from M. Sallé by Chapuis when he was monographing the group. Fortunately almost all the species described by Chapuis are represented in our collection, and types of the remainder, with one or two exceptions only, have been procurable for comparison. As all Platypids bore deeply into wood they are seldom obtained without special search, and several of the most striking forms are known to us by solitary examples. Lacordaire (Gen. Col. vii. p. 355, nota 6) has attempted an estimate of the total number of species of Scolytidæ, based on that of the Platypodides in Chapuis's monograph, and assuming that the numerical proportion which these bear in Europe to the rest of the Scolytidæ is maintained throughout the world. But in Europe the Platypodides comprise less than 2 per cent. of the Scolytidæ, in North America under 4 per cent., in Japan nearly 9 per cent., and in Central America over 18 per cent.; so that they form an increasing proportion in warm countries, and no calculation can be based on their relative frequency.

I have before suggested (Trans. Ent. Soc. Lond. 1894, p. 127) that Chapuis may have erroneously identified the sexual characters throughout his monograph, but being unable to examine fresh specimens I did not then care to disturb his determinations. Since that time Mr. Hopkins has published the results of his dissections of *P. quadridentatus* (Oliv.) and *P. compositus*, Say (Canad. Ent. xxvi. p. 274), and in accordance with his results, which agree entirely with my own, I here reverse the application of the external

sexual characters given by Chapuis after testing them in various species of *Tesserocerus*, *Platypus*, and *Crossotarsus*.

In female examples no chitinized structures, except the abdominal genital plates, can be found to form part of the genitalia. In the males the ædeagus may be readily dissected out, and sometimes is to be found protruded; it is very simple, consisting of a gently curved tube slightly dilated at its free end, on the upperside of which is an oblique oval aperture. Within the body-cavity there lies on its ventral side a chitinous structure consisting of two slender rods attached at their anterior end to form a fork (Tab. IV. fig. 17, ædeagus of *P. rugulosus*). In *Tesserocerus insignis*, Saund., this additional piece consists of an unpaired rod running nearly the whole length of the ædeagus, widened and furcate at each end. This is probably homologous with the *Gabel* of Lindemann's descriptions of the male genitalia in Scolytidæ, and among the forms which he figures the whole apparatus is most like that of the European *Scolytus multistriatus*. A comparison of the ædeagus and fork in various species does not lead one to hope that their examination will assist in specific determination.

This group is highly specialized and, with the sole exception of the mouth-parts, remarkably uniform in essential points of structure, more so than any other group of Scolytidæ. The species vary a good deal in minor adaptive characters, such as the form of the scape, the armature of the tibiæ and of the male elytra; and, with the exception of one or two small groups which are still plastic and imperfectly segregated, they are remarkably distinct and easy to delimit, at least when the males are known.

PLATYPUS.

Platypus, Herbst, Natursyst. Ins. v. p. 128, gen. 34 (1793); Chapuis, Mon. Plat. p. 97.
Cylindra, Duftschmid, Faun. Austr. iii. p. 87.

The species of *Platypus* are found in every part of the world where there is sufficient woody vegetation for their support. The continent poorest in species is Europe, containing only two, of which one is confined to the Pyrenees. So far as our present knowledge extends, the headquarters of the genus are in Tropical America, the contingent next in importance having been furnished from the Oriental region, mainly through the labours of Wallace.

The Central-American forms known to Chapuis amount to 22, from which number are excluded certain doubtfully distinct species which are not here treated separately. All these, save one, were described from Mexico, and chiefly from the material collected by M. Sallé, and now in our possession.

The species here added, most of which have been obtained by Mr. Champion, amount to 23. Of these additional species, five, *Platypus reichei*, *P. porrectus*, *P. alternans*, *P. armatus*, and *P. discicollis*, have been described by Chapuis, all from Colombia, except *P. alternans*, which was recorded from Venezuela; the remainder are new. The most important division in our fauna is that of the *Platypi plicati*, which includes the largest

members of the genus; of its 15 species, 9 are new, and comprise such conspicuous forms as *Platypus godmani*, *P. salvini*, and *P. dolabratus*.

The total number of species thus amounts to 46. Of 10, which do not occur in our collection, typical examples, with two exceptions, have been available for study from other sources.

It is necessary to draw up separate diagnostic tables for the males and females; therefore before attempting to identify an example its sex must be clearly recognized. The principal external sexual characters are as follows:—

Males. Elytra variously formed, with the interstices towards the apex frequently carinate, spinous, tuberculate, or produced into terminal processes; the base of the third interstice rarely tuberculate or transversely carinate, always less so than in the female of the same species; the abdomen less convex, with the segments sometimes armed with spines or tubercles.

Females. Elytra subtruncate at the apex (the lateral angles produced in *P. flavicornis*, ♀ alone), and gently declivous posteriorly, with a subvertical triangular or rounded terminal flattened surface, separated above from the horizontal portion by an oblique sulcus of variable depth; with shallower striæ or sulci and without well-marked carinæ, spines, or tubercles, their posterior third at most rugose or granulate; the third interstice with a raised granular or transversely carinate patch at its base; the abdomen ampler, more convex, unarmed.

Males.

(Females. Chapuis, Mon. Plat.)

1.	Elytra sulcate or subsulcate, the sulci indistinctly or irregularly punctured, if in somewhat regular rows, with the punctures confluent in parts	2.
	Elytra striate, the striæ with a single series of regular punctures	21.
	Elytra with rows of fine punctures, the sutural row at most impressed	33.
2.	Interstices of the elytra alternately elevated or tuberculate, at least towards the apex	3.
	Interstices similar throughout	20.
3.	Prothorax with a cribriform patch of 5–10 punctures round the anterior extremity of the sulcus	4.
	Prothorax with no patch of punctures	6.
4.	First elytral interstice with a strong serrate crest on the declivity	*latreillei*, Chap.
	First interstice not crested on the declivity	5.
5.	Apex of the elytra produced into two oblique truncate lobes .	*godmani*, sp. n.
	Apex uniformly declivous, the lateral angles produced downwards	*salvini*, sp. n.
6.	Apical margin of the elytra subtransverse, with the lateral angles at most very shortly produced and plicate; or with the	

lateral angles produced downwards in the plane of the declivity. (=*Platypi plicati*, Chap.) . . . . . 7.

Apex of elytra narrowed and produced horizontally into two processes, usually triquetrous at their extremity; interstices not evidently alternate before the apical third. (=*Platypi trispinati*, Chap.) . . . . . 18.

7. 1st interstice spined or at least angulated at the summit of the declivity . . . . . 8.
   1st interstice gradually declivous . . . . . 14.
8. 1st interstice spined at the apex, more or less recessed under its extremity . . . . . 9.
   1st interstice angulated and not recessed . . . . . 12.
9. 3rd, 5th, and 7th interstices spined at apex (length under 8 millim.) . . . . . 10.
   3rd, 5th, and 7th interstices angulate at apex but not spined (length 11 millim.) . . . . . [*fortis*, sp. n.]
10. Spine of the 9th interstice not situate nearer the apex than the preceding spines . . . . . 11.
    Spine of the 9th interstice situate nearer the apex than the two preceding spines . . . . . *deyrollei*, Chap.
11. Last abdominal segment not tuberculate . . . . . *auritus*, Chap.
    Last abdominal segment with a strong tubercle . . . . . *umbonatus*, sp. n.
12. Sulci deep and well-marked . . . . . 13.
    Sulci shallow, the interstices not elevated before the declivity . *obliteratus*, sp. n.
13. Sulci coarsely multipunctate (length 11 millim.) . . . . . *reichei*, Chap.
    Sulci not evidently punctured (length under 7 millim.) . . . *exaratus*, sp. n.
14. Apical margin of the elytra rounded or truncate . . . . . 15.
    Apical margin emarginate in the middle, with the lateral angles produced obliquely downwards . . . . . 17.
15. Sulci before the apex wider than the 2nd, 4th, and 6th interstices. 16.
    Sulci narrower than the interstices . . . . . *discolor*, sp. n.
16. 2nd, 4th, and 6th interstices shining, narrowly elevated . . . *liratus*, sp. n.
    2nd, 4th, and 6th interstices dull, nearly obliterated . . . . *imporcatus*, sp. n.
17. 3rd interstice strongly carinate on the declivity and produced over the apical process to its outer border . . . . . *dolabratus*, sp. n.
    3rd interstice not strongly carinate nor produced on to the apical process . . . . . *quinque-costatus*, Chap.
18. Elytral interstices longitudinally sulcate . . . . . *cribricollis*, sp. n.
    Elytral interstices shining, punctured . . . . . 19.
19. Apical processes evidently triquetrous . . . . . *dejeani*, Chap., and *rugulosus*, Chap.
    Apical processes obtusely rounded . . . . . *rotundatus*, Chap.
20. Apical margin of elytra angularly emarginate, the forehead not carinate . . . . . *limbatus*, Chap.
    Apical margin of elytra subtransverse, the forehead carinate . *discicollis*, Chap.

21. Apex of elytra truncate, with a vertical subcircular terminal impression . . . . . *quadrilobus*, sp. n.
Apex obliquely declivous and produced . . . . . 22.
22. Interstices 1, 3, 5, 7, 8, 9 terminating in spines around the declivity . . . . . 23.
The outer interstices not spined . . . . . 24.
23. Spine of the 3rd interstice larger than those of the 1st or 5th . *acutidens*, sp. n.
Spines of the 1st, 3rd, 5th interstices equal . . . . . *dohrni*, Chap.
24. Prothorax without pores . . . . . 25.
Prothorax with a pore on each side of the anterior end of the sulcus . . . . . 31.
25. Apical process of elytra subcylindrical or depressed . . . . 26.
Apical process a vertical quadrate lobe . . . . . *biprorus*, sp. n.
26. Third abdominal segment with two spines . . . . . *flavicornis*, Fab.
Third segment unarmed . . . . . 27.
27. Apical process depressed, evidently transverse . . . . . 28.
Apical process cylindric, as long or longer than broad . . . 29.
28. 1st interstice tuberculate from the middle . . . . . *vicinus*, sp. n.
1st interstice not tuberculate before the apical carina . . . *angustatus*, Chap.
29. 3rd interstice not conjoined with the process by a ridge . . . *alternans*, Chap.
3rd interstice conjoined with the process by a ridge . . . . 30.
30. Prothorax subquadrate, feebly emarginate at the sides . . . *longulus*, Chap.
Prothorax oblong, strongly emarginate laterally . . . . . *porosus*, sp. n.
31. 1st elytral interstice straight to the apex . . . . . 32.
1st interstice incurved at the apex . . . . . *haagi*, Chap.
32. 1st interstice conjoined with the upper ridge of the process; its apex not reaching so far back as the posterior elytral border. *compositus*, Say.
1st interstice not conjoined with the upper ridge; its apex reaching as far back as the posterior elytral border . . . *poriferus*, Chap.
33. Interstices alternate at the apex . . . . . 34.
Interstices not alternate . . . . . *occipitalis*, Chap.
34. Elytra with a vertical lunate impression at apex, the last abdominal segment spined . . . . . *armatus*, Chap.
Elytra more or less declivous at apex, the abdomen not spined . 35.
35. Interstices not carinate before the apex . . . . . 36.
Interstices carinate throughout . . . . . *pulchellus*, Chap.
36. Apex of the elytra with projecting spines . . . . . 37.
Apex of the elytra not spined . . . . . 38.
37. Postero-lateral angles of the elytra not produced . . . . . *ustulatus*, Chap.
Postero-lateral angles produced into a spine . . . . . *concinnulus*, sp. n.
38. Apical margin of the elytra not emarginate, the 1st interstice more elevated than the others . . . . . *marcidus*, sp. n.
Apical margin with a shallow emargination, the alternate interstices equally elevated . . . . . *excisus*, Chap.

Females.

(Males. Chapuis, Mon. Plat.)

1.	Anterior end of prothoracic sulcus with a group of ten or more close punctures on either side	2.
	Anterior end of sulcus with 1 (rarely 2 or 3) pores on either side	3.
	Prothorax without groups of deep punctures or pores	11.
2.	Front finely punctured towards the vertex (length 8 millim.) .	*latreillei*, Chap.
	Front with very coarse transverse punctures towards the vertex (length over 10 millim.)	*godmani*, sp. n.
3.	Anterior tibiæ with numerous fine irregular carinæ	4.
	Anterior tibiæ with five or six strong carinæ	6.
4.	Prothorax sparingly punctured, the terminal depression of the elytra subconcave	[*dohrni*, Chap. *acutidens*, sp. n., and
	Prothorax closely and finely punctured, the terminal depression subconvex	5.
5.	Elytral interstices with numerous punctures	*putzeysi*, Chap.
	Interstices sparingly punctured	*filiformis*, Chap.
6.	Prothoracic sulcus with more than two adjacent pores . . .	*porosus*, sp. n.
	Sulcus with a single pore on either side	7.
7.	Oral half of the front dull, not evidently punctured	*rudifrons*, Chap.
	Front punctured or striate almost to the mouth, the oral border shining	8.
8.	Oral half of front with transverse strigæ or strigose punctures .	9.
	Oral half of front with deep circular punctures	*biprorus*, sp. n.
9.	Strigæ of the front obsolete on the oral border	10.
	Strigæ of the front continued on to the oral border	*haagi*, Chap.
10.	Front with elongate strigæ	*compositus*, Say.
	Front with short strigose punctures	*poriferus*, Chap.
11.	Elytra striate, with subconvex interstices	12.
	Elytra punctured in rows, the sutural stria alone impressed .	20.
12.	The alternate interstices subelevated	13.
	The interstices similar throughout	18.
13.	Aboral half of the front rugose or areolate, without deep impressed punctures	14.
	Aboral half of the front with scattered deep punctures . . .	16.
14.	Aboral half of the front dull, not evidently areolate	*auritus*, Chap.
	Aboral half subnitid, areolate	15.
15.	Prothorax oblong (length 5 millim.)	*deyrollei*, Chap.
	Prothorax quadrate (length 10 millim.)	*dolabratus*, sp. n.
16.	Prothorax quadrate	17.
	Prothorax oblong (length under 5 millim.)	*porrectus*, Chap.

17.	Prothoracic sulcus continued in front by a line of punctures (length over 10 millim.)	*reichei*, Chap.*
	Sulcus not continued by a punctured line (length 7 millim.) .	*exaratus*, sp. n.
18.	Prothorax densely punctured	19.
	Prothorax very sparingly punctured	*occipitalis*, Chap.
19.	Elytral sulci narrower than the interstices	*limbatus*, Chap.
	Sulci not narrower than the interstices	*discicollis*, Chap.
20.	Lateral angles produced at the apex of the elytra	*flavicornis*, Fabr.
	Apex of the elytra obtuse	21.
21.	Front of the head transversely strigose between the antennæ .	*dejeani*, Chap., *rugulosus*, Chap., and *rotundatus*, Chap.
	Front smooth, punctured or areolate anteriorly but not strigose.	22.
22.	Front rugose or punctured over the mouth and not impressed .	23.
	Front shining and impressed over the mouth	26.
23.	Front distinctly punctured over the mouth	24.
	Front rugose and dull over the mouth, not punctured	*pallidipennis*, sp. n.
24.	Junction of front and vertex forming an obtuse angle . . .	25.
	Junction of front and vertex broadly rounded	*concinnulus*, sp. n.
25.	Front without an impressed striga	*ustulatus*, Chap.
	Front with a small median impressed striga	*excisus*, Chap.
26.	Front with a median tubercular elevation, the oral impression deep	*frontalis*, sp. n.
	Front not elevated, the oral impression shallow	*pulchellus*, Chap.

Division Platypi truncati, Chapuis.

1. **Platypus quadrilobus**, sp. n. (Tab. IV. figg. 1, ♂ ; 1 *a*, apical depression of the elytra.)

Mas. Ferrugineo-piceus ; prothorace suboblongo, dense subtiliter punctato ; elytris ad apicem abrupte truncatis, truncatura concava, opaca, margine inferiore ad suturam emarginato, versus latera exciso, et in lobos quatuor diviso.

Long. 4·2 millim.

Male. Variable in colour, from ferruginous to piceous, the underside and legs lighter. Front of the head subconcave, dull, with close fine reticulation, the epistomal border alone shining, punctured towards the vertex, and with a median shining impressed point ; median line of the vertex wide, shining, the sides with coarse strigose punctures. Prothorax a little longer than wide, the sulcus impressed anteriorly, surface with a slight transverse impression at the front of the sulcus, with very close reticulation and close fine irregular punctuation, becoming coarser towards the basal border. Elytra with shallow subsulcate striæ, rather regularly punctured ; first and succeeding alternate interstices elevated, convex, shining along the middle, with fine irregular punctuation, remaining interstices flat, dull and reticulate ; first interstice produced at the apex into a short spine, third and succeeding interstices with a common free

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* I have not seen the female of *P. reichei*, and am not quite certain as to the exact character of its frontal sculpture. If it should be placed elsewhere in the table, it will fall into the same division as *P. dolabratus*, ♀ .

margin forming the upper border of the terminal impression, which is subcircular, oblique, and quite opaque, divided by an obtuse emargination at the suture and a deep excision on either side into four processes, the two outer small and pointed, the inner processes obtuse, larger, extending farther downwards and backwards. Abdomen coarsely and rugosely punctured, its apical segment longitudinally carinate.

Hab. Costa Rica, Irazu (*Rogers*).

Four males were taken of this species, which is much smaller than any other described member of the *Platypi truncati*. In structure it most resembles *P. abbreviatus*, Chap.

Division Platypi coronati, Chapuis.

2. **Platypus acutidens,** sp. n. (Tab. IV. figg. 2, ♂; 2 *a*, apex of elytra; 2 *b*, anterior tibia: 3, ♀; 3 *a*, anterior tibia.)

Ferrugineus; prothorace suboblongo; elytris apice nigricantibus; subtus cum antennis pedibusque testaceus.

Mas. Fronte fere plana, areolata; elytris striato-punctatis, interstitiis 1°, 3°, 5°, 7° et 8° haud declivibus in spinulas productis, 3° longiore, depressione postica obliqua utrinque in processum cylindricum ad apicem emarginatum producta.

Long. 6·5 millim.

Fem. Fronte plana, antice punctata, postice areolata; prothorace poro in utroque sulci latere ornato; elytris substriatis, interstitiis 3° et 5° subelevatis, depressione postica subconcava, angulis lateralibus distinctis.

Long. 7 millim.

Male. Evidently closely allied to *P. dohrni* (♀), Chap., from the description and figure of which species it can only be differentiated as follows:—The elytra are twice as long as the prothorax, the spine of the third interval is fully twice as long and much larger than those of the 1st, 5th, 7th, and 8th interstices, which are equal in length; the spine of the last is placed nearer the apex. The terminal process becomes a little thicker towards the tip, which is obliquely excised at the apex and inner side, so that its margin seen from behind is semicircular, being convex on the outer side with the inner, upper, and lower angles somewhat prominent. Posterior coxæ produced into a short triangular tooth.

Female. Indistinguishable from *P. dohrni* (♂), Chap., by the description alone. The smooth line of the vertex is bounded on either side by a closely rugose space, outside which the vertex is shining, with scattered punctures. The terminal depression is subconcave, its inferior border is nearly straight, the lateral angles prominent but blunt; the sulcus separating it from the horizontal portion is deep and bounded externally by a distinct tubercle above the lateral angle.

Hab. Guatemala, Capetillo (*Champion*).

Four examples. The species is without doubt distinct from *P. dohrni* by characters which are too important to have been overlooked by Chapuis, or to be judged as varietal. Unfortunately the impossibility of seeing typical specimens of that species has prevented an exact differentiation, particularly of the females. The female of *P. acutidens* can be distinguished from that of *P. putzeysi* by the structure of the apical impression.

3. **Platypus dohrni.**

Platypus dohrni, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 115, fig. 37[1].

Hab. Mexico[1].

I have not seen either sex of this species, which is very nearly allied to the preceding. The apical spines of the 1st, 3rd, 5th, and 7th interstices in the male are described and figured as of equal length, and nothing is said about any excision at the tip of the posterior process, which is figured as being obtusely pointed.

4. **Platypus putzeysi.**

Platypus putzeysi, ♂ (*lege* ♀), Chap. Mon. Plat. p. 117, fig. 39 [1].

Hab. Mexico, Toxpam, Oaxaca (*Sallé* [1]); Guatemala, Purula (*Champion*).

The single female example taken by Mr. Champion agrees well with the type from Sallé's collection. No male form can be associated with it.

5. **Platypus filiformis.**

Platypus filiformis, ♂ (*lege* ♀), Chap. Mon. Plat. p. 116, fig. 38 [1].

Hab. Mexico [1].

The species does not occur in our collections; and I have seen only the typical examples from Chapuis's collection. These are two in number, and it is noteworthy that the single pore described by Chapuis on either side of the prothoracic sulcus is replaced in one specimen by a series of three pores.

Division Platypi plicati, Chapuis.

6. **Platypus auritus.**

Platypus auritus, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 123, fig. 43 [1].

Hab. Mexico, Toxpam (*Sallé* [1]), Almolonga (*Höge*).

Represented by one specimen in addition to the types from Sallé's collection.

7. **Platypus deyrollei.**

Platypus deyrollei, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 127, fig. 46 [1].

Hab. Mexico, Toxpam (*Sallé* [1]); Guatemala, Las Mercedes, Cerro Zunil (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

We have a pair from Sallé's collection. Eight more specimens were taken by Mr. Champion.

8. **Platypus umbonatus,** sp. n. (Tab. IV. fig. 4, apex of elytra, ♂.)

Mas. Rufo-piceus, elytris postice nigricantibus; fronte subconcava, fortiter rugose punctata; elytris sulcatis, interstitiis 1°, 3°, 5°, 7°, 8°, 9° elevatis, in spinulas longitudine gradatim decrescentes productis, depressione postica fere regulariter convexa, vix plicata, abdominis segmento 5° tuberculato.

Long. 7 millim.

Male. Reddish-pitchy, with the elytra black towards the apex. Front of the head subconcave, coarsely and rugosely punctured, with a median shining impressed point. Prothorax oblong, the median sulcus widened in front and continued by an impressed line nearly to apex; the punctuation irregular, fine, and rather close over the anterior half and sides, stronger on either side of the median line, scantier behind and wanting round the sulcus, the basal border strongly punctured. Elytral sulci narrow in the middle, deeper at the extremities; 1st and succeeding alternate interstices not strongly raised, shining and sparingly punctured, the remaining interstices shining in the middle, the extremities alone punctured or tuberculate; apical spines of the 1st, 3rd, 5th, and 7th interstices successively decreasing in length, those of the 8th and 9th about equal in length to the 7th; declivity regularly convex, dull, with shining punctures in the lines of the sulci, the carinate interstices indicated by feeble elevations, the lateral angles shortly produced. Fifth abdominal segment armed with a pointed tubercle.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

This species, of which a single male was taken by Mr. Champion, is allied to *P. auritus*, but is distinguishable from it and its nearest allies by the absence of any distinct elevations on the surface of the apical declivity and by the well-marked tubercle on the last abdominal segment.

9. **Platypus reichei.**

Platypus reichei, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 135, fig. 53[1].

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui (*Champion*).—COLOMBIA[1].

This large species is represented in our collections by three male examples *.

10. **Platypus exaratus,** sp. n. (Tab. IV. fig. 5, apex of elytra, ♂.)

Ferrugineus; prothorace quadrato, dense punctato.
Mas. Elytris ad apicem piceis, late sulcatis, interstitiis angustis, nitidis, 1°, 3°, 5°, 7°, 8°, 9° posterius carinatis, carinis in declivitate summa abrupte angulatis.
Long. 6·3 millim.

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* The following species, not from Central America, is so like *P. reichei* as to be suitably described here:—

Platypus fortis, sp. n.

Mas. Niger, fronte antice subnitida, obsolete punctata, postice rugosa; prothorace latitudine paullo longiore; elytris fortiter sulcatis, sulcis distincte punctatis, interstitiis 1°, 3°, 5°, 7°, 8°, 9° elevatis, usque ad declivitatem nitidis, 1° in declivitate summa spinula obtusa intus curvata armato, ceteris parce punctatis versus apicem tuberculatis.
Long. 11 millim.

Closely allied in size and shape to *P. reichei*, the front of the head more finely rugose and shining over the mouth. Prothorax relatively a little longer, its sulcus preceded by a well-defined median smooth line; the lateral punctures fewer and stronger. Carinate interstices of the elytra entirely smooth towards the declivity, above which the first pair is produced to form two short, blunt, incurved spines; the non-carinate interstices less rugose, with very few punctures and three or four tubercles before the declivity; lateral protuberances of the declivity smaller and more pointed; the apical margin furnished with a small tubercle near the suture.

Hab. COLOMBIA (*coll. Blandford*).

Fem. Ferruginea, fronte subconcava posterius fortiter punctato-rugosa; elytris obsolete sulcatis, interstitiis subconvexis alternatis.
Long. 7 millim.

Ferruginous, the prothorax quadrate.
Male. Entire front dull and strongly punctured. Prothoracic punctures close and irregular over the apical half and basal margin, effaced round the sulcus. Elytra infuscate towards apex, the sulci broad, with indistinct confluent punctures; 1st, 3rd, 5th, 7th, 8th, and 9th interstices elevated, shining, subimpunctate, becoming narrower and carinate behind the middle, abruptly declivous and subtuberculate posteriorly; remaining interstices narrow, effaced at base, becoming elevated and shining towards the declivity, tuberculate on its summit, base of the 2nd, 4th, and 6th with a row of granules; declivity short, convex, with the sulci and carinæ continued on to it, and with a ridge extending from the carina of the 3rd interstice to a small process on the outer angle, apical margin with a tooth between the suture and lateral process. Middle of last ventral segment obtusely elevated.
Female. Front concave, with a short median impressed striga, its oral half glossy, with a few strong lateral punctures, aboral half subrugose, strongly and deeply punctured; vertex rather sparsely punctured, its median line alone shining. Prothoracic punctuation very fine, sparser posteriorly. Elytral sulci shallow, subimpunctate; interstices subconvex, the 1st, 3rd, and 5th more elevated; terminal depression granulate and shortly pilose, its sutural border longer than the inferior margin of either elytron, the lateral angles not prominent.

Hab. Guatemala, Cerro Zunil, Panajachel, San Gerónimo (*Champion*).

Five specimens, one male and two females from Cerro Zunil.

11. **Platypus obliteratus,** sp. n. (Tab. IV. figg. 6, ♂; 6 *a*, apex of elytra.)

Mas. Piceus, elytrorum basi ferruginea; prothorace quadrato, conferte subtiliter punctulato; elytris obsolete sulcatis, interstitiis alternis leviter elevatis, in declivitate summa carinatis et angulatim declivibus, 3° ad basin haud granulato; ceteris non elevatis subnitidis, posterius rugosis, 4° ad basin serie granulorum ornato.
Long. 7 millim.

Male. Piceous, the basal half of the elytra ferruginous. Front concave and closely rugose, punctured towards the vertex. Prothorax subquadrate, covered with close fine punctuation, the sulcus effaced behind. Elytral sulci almost obliterated and represented by rows of shallow irregular punctures; the alternate interstices slightly convex, not carinate except at the summit of the declivity, where they form short smooth angulated carinæ, obliterated behind, the 1st alone continued to the apex by a row of tubercles, base of the 3rd neither punctured nor granulate; the 2nd, 4th, and 6th flattened, not strongly shining nor tuberculate, rugose and dull posteriorly; declivity oblique, convex, and closely rugose, the lateral angles produced and pointed, from them a fold runs forwards and inwards to terminate in a small tubercle. Last ventral segment longitudinally carinate.

Hab. Costa Rica, Irazu (*Rogers*).

One example represents this distinct species, which is peculiar among the *Platypi plicati* for the feeble development of the sulci and elevated interstices of the elytra, which, however, display the type of structure usual among the males of this division.

12. **Platypus liratus,** sp. n. (Tab. IV. figg. 7, ♂; 7 *a*, apex of elytra.)

Mas. Ferrugineus, elytris postice nigricantibus; prothorace subquadrato, dense subtiliter punctato; elytris late sulcatis, interstitiis 1°, 3°, 5°, 7°, 8°, 9° elevatis, angustis, nitidis, posterius gradatim declivibus, 1° et 3° usque ad marginem posticum seriato-tuberculatis, ceteris ad basin subobliteratis, ad apicem tuberculatis.
Long. 6 millim.

Male. Similar in size and appearance to the male of *P. quinque-costatus*. Ferruginous brown, with the apical half of the elytra piceous. Front of the head concave, coarsely punctured and rugose, with a transverse row of strong punctures along epistomal border. Prothorax little longer than broad, closely and finely punctured, the sulcus deep and preceded by a fine linear impression. Elytral sulci wide, irregularly and coarsely punctured, the elevated interstices narrow and shining, rugose and coarsely punctured at base, not angulated at the declivity but produced to the apex of the elytra as interrupted series of tubercles, evident on the 1st and 3rd interstices; alternate interstices coarsely punctured and almost obsolete at base, appearing as narrow elevated lines towards the middle of the elytra, and bearing three or four tubercles before the declivity, which is wider than in *P. quinque-costatus*, with the lateral angles small, pointed, and directed obliquely outwards; hind margin convex and tuberculate in the line of the first interstice. Posterior femoral recess with one small spinous tubercle on the episternum.

Hab. NICARAGUA, Chontales (*Janson*).

The only example of this species that I have seen is in my own collection. The description of *P. marginatus*, Chap., applies to it in many respects, but the sculpture of the prothorax in the latter species is quite distinct, as is the structure of the recesses for the posterior femora.

13. **Platypus latreillei.**

Platypus latreillei, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 143, fig. 60[1].

Hab. MEXICO [1], Oaxaca (*Sallé*); GUATEMALA, San Juan in Vera Paz (*Champion*); NICARAGUA, Chontales (*Belt*, *Janson*).

The collection contains typical examples of both sexes. A female specimen from Chontales, not separable in structure from *P. latreillei*, is ferruginous, with the apex of the elytra infuscate. The difference in colour is presumably due to immaturity, but of this the specimen presents no evident signs.

14. **Platypus imporcatus,** sp. n. (Tab. IV. figg. 8, ♂; 8 *a*, apex of elytra; 8 *b*, recess for posterior femur.)

Mas. Piceus, elytris postice nigricantibus, subtus cum pedibus ferrugineus; prothorace oblongo, densius punctato, punctis ad latera et basin fortibus; elytris late sulcatis, interstitiis 1°, 3°, 5°, 7°, 8°, 9° carinatis, nitidis, postice gradatim declivibus, tuberculatis, ceteris fere obsoletis, opacis, postice subtuberculatis; margine apicali convexe rotundato, integro.

Long. 6 millim.

Male. Piceous-brown, the elytra black towards apex. Front subconcave, rugosely punctured, with a median smooth elevation impressed in the middle, from which a weak carina extends to the vertex. Prothorax a little longer than broad, the sulcus deep, wider in front, preceded by a slight impression on each side of the disc, on either side of its anterior extremity is a minute pore-like puncture; punctuation of the anterior half close and rather fine, weaker posteriorly, the basal half of the sulcus and the hind margin bordered with strong, deep, rounded punctures, the side margins with close, shallow, variolose punctures. Elytra with wide sulci, their punctures shallow and confluent, the elevated interstices smooth, shining, and narrow from the base to the declivity, the others nearly obsolete, dull throughout, narrowly raised and tuberculate behind the middle; bases of the 3rd and 4th interstices granulate, those of the 2nd, 5th, and succeeding interstices coarsely punctured; declivity very oblique, dull, its hind margin uniformly convexly rounded, the carinate interstices continued on to it without angulation as a series of piliferous tubercles, the 1st not reaching the apex of the declivity, the 3rd curved outwards and conjoined by a

ridge with the postero-lateral angle. Free border of the posterior femoral recess serrate and subspinous on the metasternum, with a stronger spine arising from the episternum.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

This species, of which Mr. Champion took a single specimen, is certainly allied to *P. marginatus*, Chap., and may possibly be identical with it. But Chapuis's description does not entirely correspond, because in *P. marginatus* he describes all the elytral interstices as carinate, whereas in *P. imporcatus* only the alternate interstices are carinate. Moreover, the shape of the apex of the elytra in *P. imporcatus* by no means corresponds with that in Chapuis's figure. It is justifiable, therefore, to describe this insect under a separate name, more especially as *P. marginatus* is a Brazilian species.

15. **Platypus discolor,** sp. n. (Tab. IV. figg. 9, ♂; 9 *a*, apex of elytra.)

Mas. Ferrugineus, elytris post partem tertiam basalem nigricantibus; prothorace latitudine sublongiore, subtiliter irregulariter punctato; elytris anguste sulcatis, interstitiis nitidis, subconvexis, alternis elatioribus, postice gradatim declivibus, tuberculatis.

Long. 5·3 millim.

Male. Ferruginous-brown, with the posterior two-thirds of the elytra blackish. Front subconcave, rather closely areolate and rugose, with a median impressed point; vertex covered with large variolose impressions, the median space and bases of the lateral lines shining. Prothorax a little longer than broad, the sulcus shallow, obsolete behind, and not extending forwards beyond the posterior third; punctuation fine, irregular, and dense towards middle of disc, side and hind margins with larger shallow punctures; surface with a double impression on either side internal to the lateral emargination. Elytral striæ fine, shallow, distinctly punctured, deeper and wider towards apex; interstices feebly convex, shining, finely and irregularly punctured, posteriorly gradually declivous, and serrate with series of piliferous tubercles: 1st, 3rd, and 5th a little wider and more prominent; base of the 2nd punctured, of the 3rd, 4th, and 5th sparingly granulate; apex of the 3rd conjoined by a fold with the short postero-lateral process; declivity below the fold subtriangular and nearly vertical.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One example. Similar to *P. liratus*, but smaller, with narrow fine elytral sulci; in the latter species they are much wider than the interstices.

16. **Platypus godmani,** sp. n. (Tab. IV. figg. 10, ♂; 10 *a*, front; 10 *b*, apex of elytra: 11, ♀; 11 *a*, front.)

Niger, prothorace quadrato, utrinque præter sulcum congerie punctorum parva munito; elytris sulcatis, interstitiis alternatis, haud carinatis.

Mas. Nitidus, fronte concava grosse punctata; interstitiis 1°, 3°, 5°, 7° in declivitatem productis, spinulosis, angulis posticis in lobos obliquos subquadratos productis, margine postico inde fortiter emarginato.

Long. 10·5 millim.

Fem. Subopaca, subsericea; fronte supra fortiter rugose punctata, medio carinata; elytrorum sulcis latis subtiliter multipunctatis, interstitiis ad basin apicemque granulatis.

Long. 11 millim.

Black, underside and legs piceous; prothorax quadrate; elytral interstices alternate.

Male. Front subconcave, shining, strongly punctured, the punctures deep and circular over the mouth, longitudinally strigose towards the vertex. Prothorax shining, scantily punctured, except at the margins; sulcus fine, with a group of about nine small punctures on either side of its anterior extremity; hind

angles of the emarginations prominent. Elytral sulci strongly punctate, continued to apex; bases of the first five interstices granulate, except the 3rd, which is punctured; 1st, 3rd, 5th, 7th interstices wider, convex, shining, subimpunctate, declivous behind, with two (the 7th with one) spinous tubercles on the declivity; remaining interstices punctate, obsoletely tuberculate towards apex; declivity oblique, narrowed, its lateral angles produced into two oblique subquadrate lobes, their outer margins the higher, their outer angles conjoined by a ridge to the 3rd interstice; apex deeply emarginate. Last ventral segment transversely impressed.

Female. Front dull and sericeous towards the mouth, with scattered minute shining punctures, and an elevation situate between two lateral impressions, above with lines of coarse oblong punctures radiating from the eyes, and a median longitudinal elevation, marked by an incised line; vertex shining, the median space not elevated. Prothorax as in the male, but dull, sericeous, with fine scattered punctures before the middle, and the hinder half subimpunctate; sulcus with two adjacent patches, each of about twenty punctures. Elytral striæ wide, shallow, multipunctate; interstices granulate at base, rugose, and subasperate at apex, the elevated interstices subnitid and impunctate, the others narrow and closely punctured; apical depression widely impressed below, granulate and hairy, its sutural margin longer than the lower border of either elytron.

Hab. GUATEMALA, Sinanja in Vera Paz (*Champion*).

A very fine and distinct species, of which but a single pair was taken.

17. **Platypus dolabratus,** sp. n. (Tab. IV. figg. 12, ♂; 12 *a*, front; 12 *b*, apex of elytra: 13, ♀; 13 *a*, front.)

Mas. Piceo-niger; fronte supra sparsim grosse punctata; elytris anguste sulcatis, interstitiis planis nitidis, 3° et 5° paullo latioribus, 1° et 3° gradatim declivibus, elevatis, tuberculatis, hoc extus curvato et cum plica processus postici declivis elongati conjuncto.

Long. 10 millim.

Fem. Fusco-ferruginea; fronte subconcava præ verticem areolata; scapo tumido; prothorace subquadrato, parce punctato; elytris sulcatis, interstitiis subconvexis, ad basin punctatis, 3° et 3° subelatioribus.

Long. 9·5 millim.

Male. Piceous-black, limbs rufescent. Front concave, subsulcate from vertex to a median impressed point, dull, with fine shining punctures, closer towards the mouth, and scattered deep punctures towards the sides. Prothorax nearly quadrate, the punctuation fine, close in the middle of the disc; sulcus short, widened behind, with two small punctures on either side to represent the groups found in allied species. Elytral sulci shallow, interrupted; interstices shining, flat, base of the 2nd punctured, of the 4th granulate, 3rd and 5th somewhat wider throughout; declivity gradual, with the 1st and 3rd interstices carinate and tuberculate, the former not reaching the apex, the latter produced out over the apical process to form a tooth on its outer side, apices of the three following interstices with a few tubercles; postero-lateral angles produced downwards and backwards to form the apical processes, the sutural angles slightly produced.

Female. Fusco-ferruginous, elytra lighter, metasternum and abdomen testaceous. Front subconcave, dull, and areolate from the vertex to a curved line joining the antennal foveæ; below subconvex, shining, with two to six deep punctures along the oral border; scape very convex, and swollen below. Prothorax subquadrate, the sulcus fine, preceded by an impressed line, hind angles of the emarginations impressed; punctuation fine, diffuse, closer round median line, and stronger round the margins. Elytral sulci moderately deep, with shallow crowded punctures; interstices subconvex, subalternate, scarcely punctured, rugose before apex, base of the 3rd carinate; apical depression triangular, closely tuberculate.

Hab. PANAMA, Bugaba (*Champion*).

Three examples. The male is distinct from any other described species in the structure of the apical portion of the elytra. The female answers very closely to

the description of *P. batesi*, ♂, Chap., a Brazilian species, but differs at least in one character, the shape of the scape, which in *P. batesi* is described and figured as a blunt isosceles triangle.

18. **Platypus salvini,** sp. n. (Tab. IV. figg. 14, ♂; 14 *a*, apex of elytra; 14 *b*, front.)

Mas. Ferrugineo-piceus, elytris postice infuscatis; fronte concava; prothorace quadrato, in utroque sulci latere congerie punctorum minuta ornato; elytris sulcatis, interstitiis fere planis, latitudine vix alternatis, 1°, 3°, 5° lævibus in summa declivitate breviter spinosis, inde gradatim declivibus, ceteris punctatis, postice tuberculatis; declivitate obliqua subangustata tuberculata, margine postico serrato.

Long. 10 millim.

Male. Piceous-red, the elytra infuscate. Front concave, areolate and rugose, with scattered deep punctures towards the vertex and mouth, with the median space of the vertex continued on to it as a slight carina, obliterated above the middle, epistoma raised and conjoined at the sides to the antennal foveæ by a curved ridge. Prothorax quadrate, sulcus shallow, on either side of its anterior end is a patch of about six small punctures; surface with several slight impressions, especially one about the middle of either side, and one close to the median line near the apex, its punctuation irregular, close, and fine, stronger at the sides, base, and hind part of the sulcus. Elytral sulci narrow, with a single row of confluent punctures; interstices finely granulate at the base, the granules extending farthest on the fourth interstice, slightly convex and scarcely alternate, the 1st, 3rd, 5th, and 7th shining, impunctate, and with a single sharp tubercle at the summit of the declivity, the remainder with scattered punctures, and with a row of smaller tubercles before the declivity, which is oblique, shining, punctured in the line of the sulci, and tuberculate along the 1st and 3rd interstices; postero-lateral processes small, declivous, entire, connected by a curved fold with the 3rd interstice, and separated by a notch on the hind margin from a small serrated lobe, external to an emargination at the suture.

Hab. Guatemala, Cerro Zunil (*Champion*).

Two examples. This large species belongs to the subdivision which includes the S.-American *P. robustus*, Chap., and *P. parysi*, Chap., but is considerably larger than either, with the elytral sulci finer, and the interstices entirely shining and less alternate.

19. **Platypus quinque-costatus.**

Platypus quinque-costatus, ♀ (*lege* ♂), Chap. Mon. Plat. p. 149, fig. 65[1].

Hab. Mexico, Toxpam (*Sallé*[1]); Guatemala, San Joaquin and Purula in Vera Paz, Dueñas (*Champion*).

Two examples from M. Sallé's collection are typical, and Mr. Champion has obtained five others; but neither collector has taken any *Platypus* that can be the female of this species.

20. **Platypus porrectus.**

Platypus porrectus, ♂ (*lege* ♀), Chap. Mon. Plat. p. 150, fig. 67[1].

Hab. Panama, Volcan de Chiriqui (*Champion*).—Colombia[1].

A solitary example taken in Panama may be referred to this species, of which the male has not been described. Unfortunately no type-specimen has been accessible, and therefore, though the example corresponds with Chapuis's description, its identity

is not placed beyond question. It is probably impossible to describe most female *Platypi* so as to exclude the chance of error in the determination of unknown examples by the descriptions alone.

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21. **Platypus flavicornis.**

Bostrichus flavicornis, Fabr. Mant. Ins. p. 36 [1].

Scolytus flavicornis, Oliv. Entom. iv. gen. 78, p. 4, t. 1. figg. 1 *a*, *b* [2].

Platypus flavicornis, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 154, fig. 70 [3]; Lec. Rhynch. N. Am. p. 343 [4].

Hab. NORTH AMERICA, Georgia [3], Carolina [2], Florida, and Texas [4].—MEXICO [3 4].

This species from the Southern States of North America is said to extend into Mexico. No example has, however, reached us from that country.

22. **Platypus vicinus,** sp. n. (Tab. IV. figg. 15, ♂; 15 *a*, apex of elytra.)

Mas. Piceo-ferrugineus, elytris ad apicem infuscatis; prothorace oblongo, conferte punctato; elytris tenuiter punctato-striatis, interstitiis planis, nitidis, versus apicem opacis, rudibus, 1°, 3°, 5°, 7°, 8° ante declivitatem tuberculatis, tuberculis in declivitate in carinas serratas conjunctis; processibus apicalibus brevibus, depressis.

Long. vix 6 millim.

Male. Deep ferruginous, elytra infuscate towards apex, antennæ and legs lighter. Front feebly concave, densely and finely rugose, punctured and subnitid over the angles of the mouth. Prothorax oblong, the sulcus short and shallow; surface finely and densely punctured, especially along the base. Elytral striæ fine, irregularly punctured, weakly impressed and obsolete towards apex; interstices subrugose at base, with a few granules, thence flat, shining, and finely multipunctate to near the apex, where they become dull and roughened, the rough surface beginning farther forward on the 1st interstice; 1st, 3rd, 5th, 7th, and 8th with a serrate carina on the declivity, preceded on the three former by a series of tubercles, most numerous on the 1st, remaining interstices nearly flat, with traces of tuberculation; carinæ traceable to the base of the apical processes, which are short, depressed, and serrate at the tip.

Hab. MEXICO (*coll. Blandford*).

A species, of which I possess a single example, from the collection of Mr. W. Saunders. It is allied to *P. angustatus*, of which neither description nor figure indicates the remarkable roughness of the posterior part of the elytra, nor the tubercles preceding the carinæ on the elevated interstices. In this specimen the first interstice has traces of five such tubercles, the third of three, and the fifth of one; their position is not quite symmetrical, and they are no doubt variable.

23. **Platypus angustatus.**

Platypus angustatus, ♂ (*lege* ♀), Chap. Mon. Plat. p. 157, fig. 72 [1]; Dej. Cat. 3rd ed. p. 333 [2].

Hab. MEXICO [1 2].

I have not seen the type of this species, and there is nothing which can be identified with it in our collection.

24. **Platypus alternans.**

Platypus alternans, ♀ (*lege* ♂), Chap. Mon. Plat. p. 156, fig. 71[1].

Hab. MEXICO, Omilteme in Guerrero (*H. H. Smith*).—VENEZUELA[1].

I refer to this species a single example, identified by the description alone. With this it agrees so completely as to make a separation of it impossible unless after comparison with the type. Nevertheless no example has been taken by Mr. Champion or other collectors in Central America south of Mexico.

25. **Platypus longulus.**

Platypus longulus, ♀ (*lege* ♂), Chap. Mon. Plat. p. 158, fig. 73[1].

Hab. MEXICO, Toxpam (*Sallé*[1]); GUATEMALA, Purula and Chiacam in Vera Paz (*Champion*).

We have four typical examples from M. Sallé's collection, and one specimen was obtained at each of the localities in Guatemala. The female has not yet been recognized.

26. **Platypus porosus,** sp. n. (Tab. IV. figg. 16, prothorax, ♀ ; 16 *a*, prothoracic pores.)

Angustus, piceus, subtus dilutior; fronte infra nitida, supra rudi; prothorace oblongo; elytris punctato-striatis.

Mas. Interstitiis elytrorum postice gradatim declivibus, alternis, præcipue 3°, elevatis et tuberculatis, processu postico subcylindrico, latitudine longiore, oblique declivi.

Long. 3·8 millim.

Fem. In utroque sulci prothoracici latere impressione ovali, poris usque ad quatuor munita; angulo postero-laterali elytrorum haud prominulo.

Long. 4 millim.

Slender, narrow, piceous, the limbs and underside ferruginous. Front furrowed longitudinally, and with a short, impressed, shining, median striga, its surface dull, subimpunctate, over the mouth shining and transversely punctured. Prothorax oblong. Elytra punctate-striate.

Male. Prothoracic punctuation moderate. Striæ of elytra distinct; interstices flat, subimpunctate, base of the 3rd, 4th, 5th subtuberculate; 1st, 3rd, 5th, 7th, 8th, 9th carinate and obliquely declivous towards apex, the 3rd more elevated; the declivous portions serrate, with piliferous tubercles; apical processes obliquely declivous, longer than broad, subcylindric, but narrowed towards the truncate tip.

Female. Prothoracic punctuation fine, closer on either side of the middle line before the sulcus and round the emarginations; anterior extremity of sulcus with an oval impression on each side bearing one to four asymmetrical pores. Elytral striæ shallow, deeper at base; interstices flat, with very fine sparse punctuation, setose and rough towards apex; apical surface separated above by a shallow impression, subconvex, with piliferous tubercles, its lateral angles rounded.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One male and two females of this species were taken by Mr. Champion in Panama. The female is easily distinguished by its longitudinally-furrowed forehead and by possessing more than one pore on either side of the prothoracic sulcus. One example has four pores on one side and three on the other, the latter arranged in a straight

line; the second has one pore on one side and three on the other, of which one stands outside the impression.

We figure the prothorax of the former example.

The male is not unlike *P. longulus*, ♀, Chap., differing in having the third interstice the most prominent at the apex. In this point it is allied to *P. angustatus*, Dej., but it can be separated from either of the last-named species by its smaller size and furrowed forehead.

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27. **Platypus compositus.**

Platypus compositus (♂), Say, Journ. Ac. Phil. iii. p. 324[1]; ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 163, fig. 75[2]; Lec. Rhynch. N. Am. p. 344[3].

Hab. NORTH AMERICA[1], Illinois, South Carolina, Texas, and Florida[3].—MEXICO[2].

A common North-American species, not represented in our collections. Any record of its occurrence in Mexico must be taken as doubtful, that of Chapuis appearing to be a conjecture. It probably extends into its northern provinces.

Leconte[3] assumes the identity with this species of *P. parallelus*, Chap. (? Fabr.), and suggests that of *P. tremiferus*, Chap., *P. perfossus*, Chap., and *P. rugosus*, Chap. These identifications, however probable, were not made with the assistance of typical specimens, and require proof.

28. **Platypus poriferus.**

Platypus poriferus, ♀ (*lege* ♂), Chap. Mon. Plat. p. 168, fig. 80[1].
? *Platypus viduus*, ♂ (*lege* ♀), Chap. Mon. Plat. p. 178, fig. 89[2].

Hab. MEXICO[2], Toxpam (*Sallé*[1]), Teapa (*H. H. Smith*); GUATEMALA, El Tumbador, Cerro Zunil, Zapote, Dueñas (*Champion*); PANAMA, Volcan de Chiriqui, Bugaba (*Champion*).

Fourteen examples; a type of the male has been acquired with M. Sallé's collection. The female specimens correspond in all respects with the description of *P. viduus*, Chap., of which no type has been available for examination. Both sexes vary in length (3·6–4·2 millim.)—a variation which, though slight, indicates a greater range of size than is usual in the genus. The examples show no specific differences between themselves, and probably some other allied species of Chapuis are but varietal forms of this insect.

29. **Platypus rudifrons.**

Platypus rudifrons, ♂ (*lege* ♀), Chap. Mon. Plat. p. 179, fig. 90[1].

Hab. MEXICO, Teapa[1].

I know this species by the type only. It is recognized by the oral half of the front being opaque and impunctate.

30. **Platypus haagi.**

Platypus haagi, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 173, fig. 84 [1].

Hab. Mexico, Toxpam (*Sallé* [1]), Jalapa (*Höge*); Panama, Volcan de Chiriqui (*Champion*).

Our collection contains types of both sexes from that of M. Sallé. A specimen from Jalapa is the only other Mexican example; but Mr. Champion obtained a good series on the Volcan de Chiriqui in which the males preponderate in the ratio of four to one.

31. **Platypus dejeani.**

Platypus dejeani, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 186, fig. 97 [1].

Hab. Mexico, Acapulco (*Höge*); British Honduras (*Blancaneaux*).—Guiana [1]; Brazil [1].

This species as delimited by Chapuis is, in the male, a little more robust than its successors, the apical process is evidently shorter than broad, the margin between its superior and inferior spines is straight, the spines themselves of equal length. I possess a specimen from Mexico, labelled by Chapuis himself, which is closely approached by those from Acapulco and British Honduras.

At the same time I can scarcely, even with the assistance of types, separate it with any confidence from *P. rugulosus*. Examination of long series of males from different places shows that those from each place have a certain common resemblance, but not that absolute agreement in the structure of the apical spines by which alone they can be separated. How far these forms indicate more than a single species cannot be settled, but by the collection in different localities of series carefully labelled for that purpose and marked with the actual date and place of capture. The numerous males of this and the next species in our collections are accompanied with very few females, and those principally from Zapote in Guatemala; so that it is impossible to see whether the slight indications of differences in one sex are accompanied by constant though equally slight differences in the other.

32. **Platypus rugulosus.** (Tab. IV. fig. 17, ædeagus, ♂.)

Platypus rugulosus, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 192, fig. 103 [1].
Platypus reticulatus, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 194, fig. 104 [2].
? *Platypus emarginatus*, ♀ (*lege* ♂), Chap. Mon. Plat. p. 199, fig. 109 [3].

Hab. Mexico, Presidio (*Forrer*), Toxpam (*Sallé* [1 2]), Cordova, Almolonga, Tapachula (*Höge*), Teapa [1 2] (*H. H. Smith*), Temax in Yucatan (*Gaumer*); Guatemala. Las Mercedes, Guatemala city, Zapote, San Gerónimo and Tamahu in Vera Paz (*Champion*), Yzabal (*Sallé*); Panama, Volcan de Chiriqui (*Champion*).

The species here united present no constant points of difference. Two long series

have reached us from Cordova and Zapote. In the former the form *P. reticulatus* prevails, in the latter *P. rugulosus*, but neither series is referable solely to one or the other species. The width and sculpture of the prothorax and the structure of the elytral processes are all inconstant. *P. rugulosus* is, on the whole, the commoner form.

P. emarginatus is a smaller insect, with the apical processes of the elytra more deeply emarginate. It is probably varietal, and is not represented in our collection by any specimen save the original type from Toxpam.

33. **Platypus rotundatus.**

Platypus rotundatus, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 195, fig. 105 [1].

Hab. GUATEMALA, Yzabal (*Sallé* [1]).

The male at least of this species is distinct enough, but it is probably an aberration of *P. dejeani* or *P. rugulosus*. No examples, save the types, are in our collection.

34. **Platypus cribricollis,** sp. n. (Tab. IV. figg. 18, ♂; 18 *a*, apex of elytra.)

Mas. Piceus; prothorace quadrato, in utroque sulci latere poro ornato, forte conferte areolato-punctato; elytris sulcatis, postice in processus trispinatos productis, interstitiis rimose punctatis, punctis pro maxima parte in sulcos conjunctis, 1°, 3°, 5°, 7° versus apicem tuberculatis.

Long. 3·5 millim.

Male. Piceous, the mouth, antennæ, and legs ferruginous. Front slightly concave, rugose and finely areolate, with a median impressed point. Prothorax quadrate, the sulcus short, abbreviated behind and preceded by a subelevated punctured line; at its anterior extremity are two rather small pores; surface covered with close, variolose, oblong, or substrigose punctures. Elytral sulci rather wide, irregularly punctured or reticulate, interstices elevated, 1st narrow, subcostate and impunctate throughout, 2nd and succeeding interstices with series of strong oblong punctures, more or less confluent, so that they appear sulcate for part of their length, the 3rd widened, shining, and more finely punctured at base; interstices obliquely declivous at apex, the 1st, 3rd, 5th, and 7th elevated and tuberculate, the 1st and 3rd more strongly; apical processes of the elytra broader than long, triquetrous, somewhat emarginate at apex, the external point slightly the longest, the inferior the shortest, and situated nearer to the superior than to the external point.

Hab. PANAMA, Bugaba (*Champion*).

This species, of which two examples were taken, cannot be assigned to any existing subdivision of Chapuis's division V., *Platypi trispinati*, to which it undoubtedly belongs. It must therefore be placed in a separate subdivision characterized by the presence of prothoracic pores in the male and by the subsulcate elytral interstices, which are rugose and tuberculate towards the apex. In one of the two specimens the prothoracic pores, clearly visible in the other, are barely to be traced even under the microscope. The relative size and position of these structures is apparently not a safe guide towards the differentiation and diagnosis of the species of this division.

Division PLATYPI BILOBATI, nov.

Male. Scape narrow. Prothorax without pores or groups of punctures. Elytra punctate-striate, with the interstices alternate towards the apex, the 1st and 3rd more elevated and not declivous, the postero-lateral angles produced into a subvertical quadrate lobe. Third ventral segment armed with two spines, the fifth tuberculate.

Female. Prothorax furnished with two small pores. Rows of punctures on the elytra substriate internally, not impressed towards the lateral margin, the third interstice somewhat prominent at the apex. Terminal depression vertical, impressed.

35. **Platypus biprorus,** sp. n. (Tab. IV. figg. 19, ♂; 19 *a*, apex of elytra; 19 *b*, abdomen: 20, ♀.)

Elongatus, angustus, piceus vel rufescens, elytris medio dilutioribus; prothorace oblongo, elytris tenuiter punctato-striatis.

Long. 4 millim.

Mas. Elytrorum interstitiis postice angustatis, subalternatis, 3° carinato, rugoso, haud declivi, angulo postico-laterali in lobum subquadratum producto; abdominis segmento 3° bispinato, ultimo tuberculato.

Fem. Fronte fortiter substriato-punctata; prothoracis sulco utrinque poro minuto ornato; elytrorum interstitiis 1°, 2° ad apicem subimpressis, 3° subelevato, ceteris angustatis longitudine subalternantibus.

Long, narrow, piceous-brown or red, elytra paler in the middle; legs and underside, except the abdomen, ferruginous.

Male. Front flat, dull, subrugose, with a median impressed point and a few deep punctures over the mouth. Prothorax oblong, irregularly punctured, closely towards the middle, the sulcus shallow. Elytra clearly striate, the interstices somewhat convex, narrowed, declivous, and subalternate towards apex, except the 3rd, which is wider and horizontal behind, furnished with four or five transverse ridges, and terminating in an acute angle; 5th continued to the process, which is subvertical, slightly inclined inwards above, as long as broad, convex externally, concave internally, truncate at apex. Third ventral segment with two spines, the last with a spinous tubercle.

Female. Front nearly flat, dull towards vertex, subnitid over the mouth, with deep scattered punctures and indistinct concentric striæ round an impressed median point. Prothorax as in male, but with a small pore-like puncture on either side of the anterior extremity of the sulcus. Elytra with shallow punctured striæ, weak towards sides and impressed at base; interstices subconvex, becoming closely punctured and hairy at the apex, where the first two are narrowed and slightly declivous; the 3rd granulate at base, subelevated posteriorly; apex scarcely declivous, the terminal depression subtriangular, with a well-defined superior margin, its lower border bisinuate, the lateral angles acute but not produced.

Hab. MEXICO (*mus. Oxon.*); GUATEMALA, Quiché Mountains, Capetillo, San Gerónimo (*Champion*).

Six examples, of which three are females. The structure of the elytra in the male is quite peculiar; in the female it bears a certain resemblance to that of *P. armatus*, ♀, but the prothorax is furnished with pores. For the present *P. biprorus* may be placed after the *Platypi filiformes* in the neighbourhood of *P. quadrispinatus*, Chap.

Division PLATYPI BICORNUTI, Chapuis.

36. **Platypus armatus.**

Platypus armatus, ♀ (*lege* ♂), Chap. Mon. Plat. p. 222, fig. 126[1].

Hab. COSTA RICA, Irazu (*Rogers*).—COLOMBIA[1].

Two examples. Though no typical specimen has been obtainable for comparison,

they agree so well with the description as to make their identity almost certain. They present, however, one feature about which Chapuis is silent: the bases of the 2nd and 4th elytral interstices, and most noticeably the latter, bear each a small upright spine or tubercle situate in the middle of the depressed area, and readily mistaken for a pore when seen through the microscope. These tubercles may have been overlooked by Chapuis, but their absence in the type would hardly indicate any specific difference, as their size varies in these two specimens.

Division Platypi terminati, Chapuis.

37. **Platypus marcidus,** sp. n. (Tab. IV. fig. 21, apex of elytra, ♂.)

Mas. Sordide stramineus, capite et prothoracis plaga ante sulcum infuscatis, elytris ad apicem nigricantibus; fronte media striga brevi impressa; prothorace subquadrato; elytris lineato-punctatis, interstitiis ad apicem angustatis subcarinatis, serratis, 1° et 3° magis elevatis, margine apicali integro, depressione terminali parva subquadrata.

Long. 4 millim.

Male. Dirty testaceous-yellow, head infuscate, elytra blackish at apex. Front subconvex, areolate and rugose, with deep scattered punctures along the oral border and sides, in the middle with a short linear impression, from which a subelevated line runs to the median line of the vertex, which is longitudinally impressed. Prothorax quadrate, the sulcus short and rather deep, preceded by a triangular infuscate patch, the surface of which is dull, finely strigose, with a subelevated median line, remainder of surface shining, the punctuation very irregular, close along the sulcus and basal margin. Elytra lineato-punctate, the sutural stria impressed throughout; the interstices flat, with a few piliferous punctures on the 3rd and 5th and the base of the former punctate, their apical portions narrowed and tuberculate, the 1st and 3rd elevated into serrate carinæ, the 2nd and 4th abbreviated and not reaching the hind margin, which is entire, obliquely rounded at the sides, and subtruncate in the middle; apical depression small, vertical, subquadrate, separated laterally from the oblique side-margin by a row of tubercles continued from the extremity of the 3rd interstice, and terminating in an angular prominence on the lower border of the elytra.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One example. Quite like *P. ustulatus*, ♀, but larger, with the prothorax broader, the head smoother in front and more strongly punctured, and the apical border of the elytra entire when seen from above.

38. **Platypus ustulatus.**

Platypus ustulatus, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 224, fig. 127[1].

Hab. Mexico, Toxpam (*Sallé*[1]), Teapa (*H. H. Smith*).

We possess types of both sexes from M. Sallé's collection. In addition, a single male was taken by Mr. Smith, also in Mexico.

39. **Platypus excisus.**

Platypus excisus, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 225, fig. 128[1].

Hab. Mexico, Toxpam (*Sallé*[1]); Guatemala, Zapote, Capetillo, Sabo and Cubilguitz in Vera Paz (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

Seven specimens, in addition to four types from Sallé's collection. The two examples from Panama are entirely piceous, and much darker than those from Mexico and Guatemala. They do not, however, differ structurally.

40. **Platypus pallidipennis,** sp. n. (Tab. IV. fig. 22, ♀.)

Fem. Subelongata, picea, elytris pallide testaceis, piceo-marginatis, subtus ferrugineo-testacea; fronte subconcava, rugosa, medio striga brevi notata; prothorace oblongo, disco utrinque impressionibus 4, una submediana, 3 in limbo laterali notato; elytris subtilissime lineato-punctatis, interstitio 3° ad basin granulato.

Long. 3·3 millim.

Female. Somewhat elongate, piceous, with the oral region ferruginous, the elytra very pale testaceous with a patch over the base of the 3rd interstice, the sutural and lateral borders narrowly, and the apex more broadly piceous. Front subconcave, finely rugose, and obscurely punctured, with a short median strigose impression. Prothorax oblong, shining, very scantily and finely punctured, the apical third duller, the punctures more distinct towards the base; its disc with four impressions on each side—one midway between the lateral margin and the sulcus, a little in advance of its anterior extremity, the remaining three near the lateral margin, opposite the emargination. Elytra with rows of very fine punctures, the interstices flat and impunctate, base of the 3rd granulate; terminal depression trapezoidal, its lower border excised in the middle and angulate towards the sides. Underside reddish-testaceous.

Hab. PANAMA, Bugaba (*Champion*).

The single specimen in our collection is well distinguished from the remaining females described in this division by the eight impressions on the prothorax. The colours, also, are more contrasted than in any other species.

41. **Platypus concinnulus,** sp. n. (Tab. IV. figg. 23, ♂; 23 *a*, apex of elytra.)

Testaceus, capite et prothoracis apice infuscatis, elytris stramineis ad apicem nigricantibus; prothorace oblongo, tenuiter punctato; elytris subtilissime lineato-punctatis.

Mas. Fronte media puncto obsoleto notata; elytrorum interstitiis postice carinatis, margine apicali utrinque 3-spinato, spinulis 1ª et 2ª ad apicem interstitiorum 1ⁱ et 3ⁱ, 3ª obliqua ad angulum lateralem positis.

Long. 2·7 millim.

Fem. Fronte rugosa, medio breviter strigosa; elytrorum punctis ad latera obsoletis.

Long. 3 millim.

Testaceous, head fusco-ferruginous above; prothorax with the sulcus and a triangular patch on apex fuscous; elytra stramineous, their apex blackish. Front rugose, with traces of a transverse impression, vertex closely punctate, the median line shining. Prothorax oblong, shining, duller towards apex; sulcus fine, extending nearly to the middle; punctuation fine and sparse, closer along the sulcus and base.

Male. Front with a nearly obsolete median impressed point. Striæ of elytra impressed at base; base of the 3rd interstice punctured and not elevated; interstices carinate at apex and alternate in length; hind margin trispinate, the inner pairs of spines formed by the carinæ of the 1st and 3rd interstices, the outer pointing obliquely downwards, and formed by the continuation of all the interstices external to the 4th.

Female. Front with a short impressed median striga. Elytra with rows of fine punctures, obsolete towards the sides, the sutural row impressed; interstices impunctate, base of the 3rd raised and carinate; terminal depression longer along the inferior border of each elytron than the sutural border, vertical, and separated from the horizontal portion by a slight ridge.

Hab. GUATEMALA, Pantaleon, Zapote (*Champion*).

Several examples, chiefly from Zapote. Allied to *P. ratzeburgi*, Chap., from which

the male differs in elytral structure; the female cannot be separated by any characters given in Chapuis's description.

Division PLATYPI COSTELLATI, Chapuis.

42. **Platypus pulchellus.**

Platypus pulchellus, ♀ (*lege* ♂), Chap. Mon. Plat. p. 230, fig. 134[1].

Hab. MEXICO[1]; BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, Zapote (*Champion*).

An example from British Honduras and one from Zapote are the only specimens that we have obtained. No females have been described among the *Platypi costellati*, and therefore any special characters which they may present are unknown. But it is probable that the following insect is the female of this species. (Tab. IV. fig. 24, front.)

Fem. Flavo-testacea, elytris medio pallidioribus; fronte supra os impressa, nitida, inter oculos punctata, pilosa; prothorace oblongo, subtiliter punctato, elytris obsoletissime lineato-punctatis, interstitio 3° carinato.
Long. 3·4 millim.

Female. Testaceous-yellow, the elytra paler, except at the extremities. Front impressed over the mouth, with the margins raised along the epistoma and sides up to the antennæ, its surface shining, obsoletely punctured, convex behind, and broadly rounded at its junction with the vertex, rather closely punctured between the eyes, with a fringe of erect hairs and a short median impressed line; vertex strigosely punctured, its median line fine, subelevated, and infuscate. Prothorax a little longer than broad, with a fine infuscate sulcus, delicately reticulate, with fine punctuation, denser towards the middle of the disc and a little stronger towards the hinder end of the sulcus. Elytra very finely punctured in rows, obsolete towards the sides; interstices flat, subrugose and hairy towards the apex, base of the 3rd with numerous transverse carinæ; apical depression rounded, triangular, slightly concave, tuberculate, the inferior margin of each elytron subconvexly rounded, the lateral angles rounded.

The example is from Zapote. It does not agree with the females of any other American group, except the *Platypi terminati*; and from these it is distinguishable by the impressed shining oral extremity of the front. The external punctures of the elytra are barely to be made out without a microscope.

Division PLATYPI DISCOIDALES, Chapuis.

43. **Platypus limbatus.**

Platypus limbatus, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 253, fig. 152[1].

Hab. MEXICO, Toxpam (*Sallé*[1]); GUATEMALA, Cubilguitz in Vera Paz (*Champion*).

Mr. Champion captured a single specimen, the only one in our collection besides the types from that of M. Sallé.

44. **Platypus discicollis.**

Platypus discicollis, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 254, fig. 153[1]; Dej. Cat. ed. 3, p. 333[2].

Hab. GUATEMALA, San Isidro, Pantaleon (*Champion*).—COLOMBIA[1 2].

Three specimens; the two males agree in all respects with one in my possession from Colombia, which was named by Chapuis.

Division PLATYPI PUNCTATO-SULCATI, Chapuis.

45. **Platypus occipitalis.**

Platypus occipitalis, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 273, fig. 164[1].

Hab. GUATEMALA[1]; COSTA RICA[1] (*Pittier*); PANAMA, Volcan de Chiriqui (*Champion*).

One female was taken by Mr. Champion. The prothorax is almost impunctate, save for a group of five or six piliferous punctures between the sulcus and the lateral emargination, and three or four punctures along the sides of the sulcus, which, in this specimen, are set on a slight longitudinal elevation. A male from Costa Rica taken by Pittier is in the British Museum collection.

Species incertæ affinitatis.

46. **Platypus frontalis,** sp. n. (Tab. IV. fig. 25, front, ♀.)

Fem. Ferruginea; fronte supra os profunde transverse impressa, inter oculos umbonata, scapo antennarum subtus fortiter producto, transverse triangulari; prothorace quadrato, sat dense punctato; elytris lineato-punctatis.

Long. 4·5 millim.

Female. Ferruginous, the elytra a little lighter; underside, antennæ, and legs testaceous. Front with a deep transverse shining impression over mouth, above elevated to form an obtusely pointed nodus between the eyes, and dull, with close punctuation, the median space of the vertex not raised, infuscate, prolonged to the interocular elevation, and marked with an impressed line; scape strongly produced downwards to form a transverse triangle, its peripheral edge fringed. Prothorax quadrate, slightly narrowed towards base, the lateral emarginations nearly obsolete, sulcus short and abbreviated behind; surface with irregular dense punctuation, closest towards the middle, and absent around the sulcus. Elytra rather short, distinctly lineato-punctate, the sutural row not impressed; interstices flat, confusedly punctured at base, then in irregular single rows, the punctures a little finer than those of the striæ, transversely rugose and hairy towards the apex, base of the 3rd carinate; apical depression of each elytron as long as broad, tuberculate, its lower border and lateral angle rounded. Anterior tibiæ with six or seven well-marked carinæ; cavities for the hind femora furnished on their anterior border with small pointed tubercles.

Hab. PANAMA, Bugaba (*Champion*).

One specimen. This insect is easily recognizable by the structure of the head and the antennal scape, and by the quadrate and scarcely emarginate thorax. It is impossible to place it in any existing group of the genus, or to form a separate group for it until the male is known. The head and the antennæ show certain points of resemblance to *P. pulcher*, Chap., but as the elytra are neither sulcate nor striate, it must not be admitted among the *Platypi sulcati*.

TESSEROCERUS.

Tesserocerus, Saunders, Trans. Ent. Soc. Lond. i. p. 155 (1836); Chapuis, Mon. Plat. p. 288.
Damicerus, Spinola, MSS.; Dejean, Cat. ed. 3, p. 333 (1837).

The genus *Tesserocerus* is confined to Tropical America, whence fifteen species, of which three are Central American, have been described. Another species, *T. linearis*, is known from a single example taken in Spain, whither, no doubt, it had been accidently imported. The species are easily distinguished from those of the genus *Platypus* by the obliquely inclined front of the head, which is less sharply separated from the vertex, and by the absence of any emargination to the sides of the prothorax, the surface of which is longitudinally strigose in parts, and sometimes covered with scanty long hairs. More important, but less easily recognized, characters reside in the mouth-parts; the maxillary palpi are corneous and cylindrical in *Tesserocerus*, membranous and flattened in *Platypus*.

Chapuis has grouped the species into three divisions:—I. *Tesseroceri genuini*, which, curiously enough, does not contain the type of the genus, *T. insignis*, Saund.; II. *Tesseroceri clavati* for the latter species and *T. spinolæ*; III. *Tesseroceri tortiles* for *T. inermis*, Guér.

This arrangement is unnatural. The third division is more remote from the other two than they are from each other, differing as these do only by the greater or less production of the scape in the females. Now *T. belti*, Sharp, has in this character precisely the same relation to *T. inermis* as have the species of Division II. to those of Division I. It is better, therefore, to amalgamate the two latter and to retain two divisions only instead of the four which are otherwise necessary.

The development of the antennal scape is no doubt an adaptive modification connected with the boring habits of the female; it is correlated with the size of the species, and its taxonomic value is limited to that of furnishing specific characters.

Five species are known as yet from our Region.

1. Elytra with the apical margin not explanate . . . . . 2.
   Elytra with the apical margin strongly explanate . . . . . *belti*, Sharp.
2. Postero-lateral angles of the elytra produced (males) . . . . . 3.
   Postero-lateral angles not produced (females) . . . . . 6.
3. Apical margin of the elytra with a tooth between the process and the suture . *spinolæ*, Chap.
   Apical margin with no tooth internal to the process . . . . . 4.
4. Base of the third interstice granulate . . . . . 5.
   Base of the third interstice not granulate; elytral spines long, acute, incurved . . . . . *spinax*, sp. n.
5. Apical spine of the first interstice not reaching so far back as the lateral process . . . . . *dejeani*, Chap.
   Apical spine of the first interstice reaching as far back as the lateral process . . . . . *ericius*, sp. n.

6. Prolongation of the scape very long, clavate . . . . . *spinolæ*.
   Prolongation of the scape short, conical . . . . . 7.
7. Postero-lateral angles of the elytra not prominent, rounded . . . . . *dejeani*.
   Postero-lateral angles of the elytra prominent, subangulate . . . . . *ericius*.

Division I. Tesseroceri genuini.

Tesseroceri genuini et *T. clavati*, Chapuis.

Form more elongate; the groups of punctures on the prothorax situate before the base; elytral interstices alternate throughout, not markedly flexed outwards posteriorly, the apical margin not explanate, the postero-lateral angles in the male produced into a spinous process; apex of the last ventral segment emarginate in the male.

1. **Tesserocerus spinolæ.**

Tesserocerus spinolæ, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 307, fig. 190[1].

Hab. Mexico (*Sallé*[1]).

A typical example of the male from M. Sallé's collection is the only one that we possess of this species.

2. **Tesserocerus dejeani.**

Tesserocerus dejeani, ♂ ♀ (*lege* ♀ ♂), Chap. Mon. Plat. p. 303, fig. 187[1].

Hab. Mexico[1], San Andres Tuxtla (*Sallé*); Costa Rica, Caché (*Rogers*); Guatemala, Las Mercedes, Zapote (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Colombia[1].

Our series contains typical examples of both sexes from M. Sallé's collection; one or two specimens only have been received from each locality south of Mexico.

3. **Tesserocerus ericius,** sp. n. (Tab. V. figg. 1, ♂; 2, ♀.)

Angustus, ferrugineus vel badius, prothorace parce subtiliter punctato, congerie punctorum parva.

Mas. Fronte nitida, punctata, linea media impressa; elytrorum interstitio 1° in spinam acutam, processui laterali longo subtruncato adæquantem producto, 3° brevius spinato; depressione postica subverticali.

Long. 5·2–5·3 millim.

Fem. Fronte suboblonga, subconvexa, linea media impressa, pone marginem anticum fortiter punctata; elytrorum depressionis posticæ margine inferiore sinuato, angulo externo subrecto.

Long. 5–6 millim.

Slender and elongate, bright brown or ferruginous, the prothorax one-half longer than broad.

Male. Frontal area somewhat convex, rather strongly punctured, the median sulcus well marked. Prothorax with a small cordiform patch of strigose punctures. Elytra infuscate behind, the 1st interstice produced into a long subacute spine, slightly divaricate from its fellow, and, owing to the nearly vertical plane of the posterior declivity, reaching as far back as the lateral processes; the latter longer than broad, subtruncate, their inner border straight, the outer rounded; spinous processes of the 3rd and 5th interstices truncate and successively shorter, that of the 7th represented by a small nodule; declivity shining and impunctate.

Female. Front somewhat oblong, subconvex, more finely punctured, except along the shining epistomal

border, from which a median sulcus runs back to the vertex. Prothorax with minute reticulation over the whole surface, except round the anterior half of the sulcus, and finely and sparingly punctured; the sulcus fine, with a cordiform group of six or seven strigæ on either side. Elytral declivity nearly vertical, convex laterally, finely granulate and pubescent towards the sutural angles, bisinuate below, its lateral angles distinct and subrectangular.

Hab. MEXICO, Orizaba (*Bilimek*); GUATEMALA, Cerro Zunil, El Tumbador, Las Mercedes (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Two pairs have been before me from Mexico, and single specimens from the localities in Guatemala and Panama. The elytral spines of the male are a little more elongate in the Mexican examples; the extent to which these are produced backwards and the slender shape well distinguish this sex.

The female is not clearly separable by description from that of *T. linearis*, Dej., a species known by a single example taken in Spain. The type, which was in bad condition when examined by Chapuis, is not in his collection, and I am unable to trace it.

Our collection contains some six or seven females of this genus which appear to belong to one, or perhaps two, species, of which the males have not been described.

They differ from *T. ericius* (♀) by slight and comparative characters only, and it is useless to describe them in the absence of examples of the opposite sex.

4. **Tesserocerus spinax,** sp. n. (Tab. V. fig. 3, ♂.)

Mas. Elongatus, læte testaceus, capite et elytrorum apice fuscis, pilis longis erectis instructus; fronte impressa; prothorace oblongo; elytrorum interstitio utroque 1° et processu terminali in spinas longas, acutas, incurvatas productis, depressione postica obliqua.

Long. vix 5 millim.

Male. Elongate, bright testaceous, with the head and apex of the elytra infuscate. Front oblique, dull, with a deep triangular supraoral impression continued by a fine impressed line on to the vertex, which bears scattered piliferous punctures; scape slightly curved, pilose, not produced. Prothorax one-half longer than wide, narrowed towards the apex, moderately shining, with scattered substrigose punctures bearing long setæ, and a transverse patch of deep oblong punctures on each side near the base, the median sulcus long, fine, and deeper towards the apex. Elytra set with long upstanding hairs; interstices not strongly alternate, base of the 3rd simply punctured, apex of the 1st and the postero-lateral angle produced into long sharp incurved spines, the 3rd, 5th, and 7th interstices shortly spined at the summit of the oblique apical declivity and continued on it as carinæ.

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Volcan de Chiriqui (*Champion*).

A single example of this species has reached us from each locality. It is a very distinct form, separable from the males of every other known species, except *T. inermis*, Guér., by the absence of asperities at the base of the third interstice.

Division II. TESSEROCERI TORTILES (Chapuis).

Form less elongate; the groups of points on the prothorax situate at the base. Elytral interstices not alternate throughout, flexed outwards posteriorly, and divaricate at the summit of the declivity, which is oblique, with the lower border broadly explanate in both sexes, and narrowly emarginate at the suture; postero-lateral angles not produced; apex of the last ventral segment not emarginate in the male.

This division includes at present *T. belti*, Sharp, and *T. inermis*, Guér. The former only is known from Central America.

5. **Tesserocerus belti.** (Tab. V. figg. 4, ♂; 4 *a*, front: 5, ♀; 5 *a*, front.)

Tesserocerus belti, ♂ ♀ (*lege* ♀ ♂), Sharp, Ent. Monthly Mag. xvii. p. 112[1].

Hab. NICARAGUA, Chontales (*Belt*[1], *Janson*).

This splendid species is by far the largest known member of the genus, and is equalled in size by a few species only of *Crossotarsus* and *Platypus*. As Dr. Sharp has pointed out, it differs from the other known *Tesseroceri* in that the scape of the antennæ is much produced in both sexes beyond the insertion of the funiculus. It is also separated by the structure of the elytra. The striæ are very shallow, and the interstices are not alternate, except at their extremities; the bases of the third and fifth are wider, subelevated, and granulate in both sexes. Towards the apex of the elytra the interstices are curved outwards and project, terminating in the male to form a superior margin to the apical depression, incomplete at the suture, and with a serrate edge, of which the teeth correspond to the extremities of the alternate interstices; the inferior apical border is explanate, but the postero-lateral angles are rounded and not produced. In the female the first and succeeding alternate interstices terminate in short spines; the others are rounded at their junction with the declivity, which is striate and granulate in both sexes.

The elytral structure is closely related to that of *T. inermis*, Guér.

Several examples were taken at Chontales by each of its captors.

Group **CHAPUISIIDES.**

This group contains at present but a single genus, *Chapuisia*, of which the sole representative is one of the most puzzling species yet described among the Scolytidæ.

CHAPUISIA.

Chapuisia, Dugès, Ann. Soc. ent. Belg. xxix. 2, p. 58 (1885).

The structure of this curious insect has been very fully dealt with by Dugès, but without much reference to allied forms. In some points, in the rounded head, eyes, and thoracic sculpture, it has a strong likeness to certain Cossonidæ. It is especially allied to the true Platypodides in the structure of the legs; the anterior tibiæ are roughly scabrous externally, and are produced at the upper apical angle into a strong recurved uncus, which points directly backwards; the middle and posterior tibiæ are flattened, inconspicuously serrate on the upper border, and produced into a short and not very distinct mucro above the tarsal articulation. The first joint of the anterior and middle tarsi is as long as all the succeeding joints, that of the hinder tarsi, however, is

not longer than the second and third together. None of these basal joints is relatively as long as in the Platypodides, and a notable difference is found in the flattened second and the strongly bilobed third tarsal joint. The antennal club is flattened, oblong-oval, rather small; it presents traces of two curved sutures, which Dugès has overlooked. The eyes are rounded oval. I have not been able to examine the mouth-parts, which, from Dugès's very poor figures, appear to be of Scolytid or Cossonid, rather than of Platypid type. The prothorax has a deep excavation on either flank, and appears strongly constricted before the middle when seen from above; it has no side-margin. The elytra are truncate at the base, and do not overlap the prothorax. The anterior coxæ are widely separated and not large; the mesosternum is large, and its side-pieces ascend, as in Platypodides, between the prothorax and elytra; the metasternum is long. The mesonotum is not carinate.

The relationship of the Scolytinæ to *Chapuisia* is best seen in two genera—*Coptonotus*, Chap., and *Craniodicticus*, Blandf., in both of which the form of the body is curiously similar. *Coptonotus* has, however, a shortly rostrate head, a 7-jointed funiculus, and non-flattened articulate club. *Craniodicticus* a rounded head, a 5-jointed funiculus, and articulate club. Neither presents any well-marked trace of the apical tibial mucro; the first tarsal joint, short in *Craniodicticus*, is barely as long as the third and fourth together in *Coptonotus*, and the third is not bilobed in either genus. Of these two genera *Coptonotus* appears to be the more nearly allied, and serves to link *Chapuisia* with *Hylastes* and *Phlœoborus*.

One species of *Chapuisia* is known, of which examples in all stages were found by Dugès in a terebinthaceous tree in Mexico.

1. **Chapuisia mexicana.** (Tab. V. figg. 6; 6 *a*, anterior leg.)

Chapuisia mexicana, Dugès, Ann. Soc. ent. Belg. xxix. 2, pp. 56–60, t. v.[1]

Hab. Mexico, Guanajuato [1] (*Höge*).

Two examples have reached us from Herr Höge. There is a third in my collection from that of A. Deyrolle. A curious feature of the insect is to be found in the patches of opaque white scales at the base and sides of the elytra and on their declivous portion.

Subfam. *SCOLYTINÆ*.

Scolytides vrais, Lacordaire, Gen. Col. vii. p. 355.

The Central-American Scolytinæ are divisible into four groups: compared with the six given by Lacordaire they are modified by the union of the Scolytides vrais (s. str.) with the Camptocérides, and of the Phlœotrupides with the Hylesinides. The Eutomides have long since been excluded, and relegated to the neighbourhood of *Cis*. A new group, the Hexacolides, is proposed for certain genera unknown to Lacordaire, and withdrawn from the Tomicides and Hylesinides; its formation

appears to be necessary if the old distinctions between the two last-mentioned groups are to be retained. These tend to merge one into the other, and it does not seem possible to define any one constant character that will separate them.

The four groups can be thus distinguished:—

Tibiæ produced at the upper apical angle beyond the tarsal insertion into a mucro or bifid process, sometimes indistinct, except on the anterior pair . . . . *Scolytides.*

Tibiæ never produced above the tarsal insertion into a mucro or process.

Head subrostrate, visible from above; third tarsal joint usually widened and emarginate at apex or bilobed; antennal funiculus 5–7-jointed; prothorax not margined at the sides (except in *Problechilus*); anterior coxæ varying in proximity . . . . . *Hylesinides.*

Head feebly subrostrate, imperfectly concealed by the prothorax; third tarsal joint simple; antennal funiculus 6-jointed; prothorax margined at the sides, very finely or obsoletely asperate towards apex; anterior coxæ not contiguous . . . . . *Hexacolides.*

Head globose, concealed from above by the prothorax; third tarsal joint simple; anterior coxæ contiguous; prothorax rarely margined at the sides; antennal funiculus 1–5-jointed (*Hylocurus* has a 6-jointed funiculus, and the anterior coxæ not contiguous, but the head is completely concealed from above) . . *Tomicides.*

As between the Hylesinides and Tomicides, an exception to almost every character given can be found in Scolytidæ from some part of the world; and there has been much diversity of opinion as to the group in which certain genera should be placed. The only Central-American genus about which there is much ambiguity is *Problechilus*, containing insects of *Cryphalus*-like form, but with a 7-jointed funiculus and separated anterior coxæ.

Eichhoff includes it in the Tomicides, but it seems as suitably placed in the Hylesinides, in which it constitutes the only Central-American genus with a side-margin to the prothorax.

Group **SCOLYTIDES.**

Head subrostrate; eyes oblong, sometimes subemarginate; antennæ with seven-jointed funiculus, and oval or oblong compressed club. Prothorax usually with a distinct side-margin (not sharply marked in some Bothrosterni), its upper surface entirely devoid of elevated granules or asperities, punctured or strigillate; anterior coxæ remote. Side-pieces of the metasternum broad. Intercoxal process of the abdomen usually blunt and broad. Tibiæ produced at the upper apical angle into a mucro or bifid process, sometimes indistinct, except on the anterior pair.

The Scolytides, which form a tolerably homogeneous group, distinguished among other features by the sculpture of the prothorax, which is never in the least granulate or asperate as it is in the majority of Hylesinides, fall into three subgroups:—

Anterior tibiæ with the upper border unarmed, and the upper apical angle produced into a curved mucro.

Abdomen reflexed upwards from the base of the second or third segment; joints of the funiculus simple in both sexes . . . . . *Scolyti.*

Abdomen uniformly rounded from base to apex; joints of the funiculus cirrate, at least in the male . . . . . *Camptoceri.*
Anterior tibiæ produced at the upper apical angle into a bifid process, at the base of which the upper border is furnished with a single tooth . . . . . *Bothrosterni.*

Subgroup I. SCOLYTI.

Scolytides vrais [s. str.], Lacordaire, Gen. Col. vii. p. 385.

This subgroup has been usually regarded as a distinct group on account of the reflexed abdomen; but no very high value can be set on a character which is found sporadically in several non-American genera among the Platypodides (*Crossotarsus*, ♂), the Hylesinides (*Pachycotes*, Sharp), and the Tomicides (*Xyloctonus* and *Scolytogenes*). And even within the limits of the genus *Scolytus* it is variable; while in the European *S. geoffroyi*, Goeze, it is so well-marked that the abdomen is actually concave behind the first segment, in smaller species, as *S. rugulosus*, Ratz., which have no abdominal armature, the abdomen is nearly as regular in its curvature as in *Camptocerus*. The elytra are usually not declivous in the Scolyti, but in a Central-American genus, *Scolytopsis*, they are distinctly, though not strongly, declivous behind.

In the Scolyti the middle and hinder tibiæ are thickened towards the apex, the upper apical angle is prolonged into a short straight mucro, before which is a small tooth; the whole approximating to the tibial structure in the Bothrosterni.

The Scolyti comprise two genera:—

Elytra impressed within the apical margin and not declivous, their lateral margins entire; abdomen flexed upwards from the base of the second segment . . . . *Scolytus.*
Elytra gently declivous behind, their lateral margins deeply excised over the side-pieces of the metasternum; abdomen flexed upwards from the base of the third segment . . . . . *Scolytopsis.*

SCOLYTUS.

Scolytus, Geoffroy, Hist. Ins. envir. Paris, i. p. 309 (1762); Chapuis, Syn. Scol. p. 53 (Mém. Soc. Liége, 1873, p. 261) *.
Eccoptogaster, Herbst, Die Käfer, v. p. 124 (1793).
Coptogaster, Illiger, Mag. für Ins. vi. p. 321 (1807).

The genus *Scolytus* contains a large number of species described from Europe, Asia, the Malay Archipelago, Japan, North Africa, and North, Central, and South America. At present but four are known from our region, of which one is new.

* Chapuis's "Synopsis des Scolytides" was published as a *separatum* in 1869, but the volume of the 'Mémoires de la Société royale de Liége' containing it was delayed till 1873, owing to the death of M. Lacordaire, the secretary. There are thus two issues, with separate dates and pagination. The pagination given in Gemmfnger and Von Harold's 'Catalogus Coleopterorum' has no existence, and was no doubt that of the projected volume of the 'Mémoires' for 1869.

1.	Second abdominal segment unarmed	*propinquus*, sp. n.
	Second abdominal segment with a median apophysis	2.
2.	Elytra shining, regularly punctate-striate	3.
	Elytra dull, with very numerous striæ, the interstices narrow, costate . .	*costellatus*, Chap.
3.	Elytra uniform black (or piceous)	*dimidiatus*, Chap.
	Elytra brown, with the suture and margins black	*marginatus*, Chap.

1. **Scolytus propinquus**, sp. n.

Nitidus, niger, fronte dense villosa; prothorace latitudine sublongiore, lateribus dense fortiter, disco subtiliter punctato; elytris prothorace fere brevioribus, punctato-striatis, interstitiis singulis serie punctorum æqualium substriata ornatis, abdominis segmento 2° mutico.

Long. 3–4 millim.

Closely allied in form and sculpture to *S. dimidiatus*, from which it differs thus:—Front villous, with much finer hairs, not confined to the margin, erect and slightly curled inwards; the villosity stronger in one example, probably a male. Punctuation of the prothorax finer over the discal area. Interstitial punctures of the elytra stronger, and equal to those of the striæ, interstices transversely rugose towards the base. Second ventral segment of the abdomen with no trace of any armature; ventral pubescence a little longer.

Hab. MEXICO, Vera Cruz (*Höge*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Chacoj (*Champion*).

Only one example has been taken at each locality. The species is likely to be passed over as *S. dimidiatus* if the structure of the abdomen be not noticed. A single specimen taken by Conradt at Tucuru in Vera Paz appears to be distinct from this species and *S. dimidiatus*. It has the front aciculate, which is not the case in *S. propinquus*; the elytral striæ and the rows of punctures of the interstices are not impressed, and the latter are finer than the punctures of the striæ; the second abdominal segment is unarmed. As the specimen is immature, it is hardly desirable to describe it under a separate name.

2. **Scolytus dimidiatus.** (Tab. V. figg. 7, front, ♂: 8, ♀; 8 *a*, front; 8 *b*, abdomen.)

Scolytus dimidiatus, Chap. Syn. Scol. p. 57 (Mém. Soc. Liége, 1873, p. 265)[1].

Black, shining. Front (♂) entirely concealed by a dense marginal fringe of glossy brown hair, thickest and decumbent at the vertex, reaching the mouth, thinner and curled inwards at the sides; front (♀) flat, shining, subimpunctate, with a strong tubercle below the middle, fringed at the sides only with curled hairs. Prothorax as long or longer than broad, the apical submarginal impression narrow and shallow; surface strongly punctured at the sides and towards the apex, where the punctures tend to form longitudinal rows, less strongly and closely over the middle, the median smooth line not evident. Scutellum triangular, deeply depressed. Elytra not longer than the prothorax, sometimes shorter, their postero-lateral angles subserrate, the hind margins sometimes separately rounded; surface little elevated towards apex, with narrow punctured striæ, the interstices narrow, with single rows of rather finer punctures, often substriate, especially towards the apex. Abdomen black, dull, finely punctured, 2nd segment with a short blunt apophysis, sometimes laterally compressed; above it (♀) is a tuft of hairs. Legs black, the knees, tibiæ, and tarsi partly red.

Length: ♂, 2·9–3·5 millim.; ♀, 2·4–4·7 millim.

Hab. Mexico, Toxpam [1], Playa Vicente (*Sallé*), Vera Cruz (*Höge*); Guatemala, Capetillo, San Gerónimo, Chacoj in Vera Paz, Mirandilla (*Champion*).—Cuba [1].

A common species, taken in some numbers by M. Sallé at Toxpam, and by Mr. Champion at San Gerónimo. It varies in shape, the prothorax and elytra being relatively narrower in small specimens; the elytra are sometimes entirely piceous. The head (♀) may be impressed below the frontal tubercle, and the lateral fringe of hairs may vary in length, extent, and colour. The rows of punctures on the elytral interstices may be shallower or deeper, more or less striate. The apophysis varies in length and in the degree of lateral compression, which is greater in the larger examples; in one female it is so short as to resemble a vertical carina. The variation in size is more considerable than in any other Scolytid; but in this respect the genus *Scolytus* is unusually variable, and a long series of *S. multistriatus* will show almost as striking divergences.

3. **Scolytus marginatus.**

Scolytus marginatus, Chap. Syn. Scol. p. 56 (Mém. Soc. Liége, 1873, p. 264) [1].

Moderately shining, black or piceous, with the extreme borders of the prothorax reddish; elytra brown, with the suture and margins black. Front (? ♀) convex, with a transverse tubercle over the mouth connected by a smooth line with the shining emarginate oral border, punctured and weakly aciculate above. Prothorax not longer than broad, sometimes distinctly transverse, not perceptibly sinuate at base, the sides rather regularly and strongly rounded; its punctuation very close and strong at the sides and apex, finer and sparser towards the middle, with an indistinct smooth median line. Scutellum large, triangular, brown. Elytra a little longer than the prothorax, deeply impressed round the scutellum, with the apical elevation and submarginal impression not strong, punctate-striate, the striæ narrow and rather feebly impressed before the apex, the interstices narrow, with single rows of punctures, usually a little finer than those of the striæ, the rows sometimes impressed and thus substriate, the alternate interstices, the side and hind margins set (in fresh specimens) with short light bristles. Abdomen black, subconcave, 2nd segment with a short blunt apophysis. Legs entirely piceous-red.

Length 2·4–3 millim.

Hab. Mexico, Yucatan [1]; Guatemala, Torola (*Champion*).

Four examples were taken at Torola; on comparing them with the type, I can see no sexual differences. The front, thinly pubescent in two of the former examples, is nearly glabrous in the other two. The dark margins to the elytra are distinctive. The type is somewhat immature, and has the entire prothorax brown in consequence.

4. **Scolytus costellatus.** (Tab. V. fig. 9.)

Scolytus costellatus, Chap. Syn. Scol. p. 58 (Mém. Soc. Liége, 1873, p. 266) [1].

Deep black, the antennæ and tarsi reddish. Front nearly flat, closely aciculate from the mouth to the vertex, with a few curled hairs at the sides; antennal club acuminate. Prothorax transverse, with the base rather strongly bisinuate, shining, finely and sparsely punctured in the middle, with a narrow median smooth line, very coarsely punctured at the sides, the interspaces strigose towards the apex. Scutellum absent. Elytra as long as the prothorax, the postero-lateral angles broadly, the hind margin obtusely rounded; surface slightly impressed at the base of the suture, little elevated towards apex, with the submarginal impression inconspicuous, dull, entirely covered with numerous narrow deep crenate striæ,

separated by narrow costate interstices, side-borders with short erect setæ. Abdomen dull, closely punctured and shortly pilose, 2nd interstice with a very short tubercular apophysis. Upper margin of middle tibiæ with fine irregular dentation.

Length 4·7 millim.

Hab. Mexico, Toxpam (*Sallé*).—Brazil, New Friburg [1].

The one example from M. Sallé's collection differs in no way from the type, which, if correctly labelled, is from a very distant locality. I have never seen a third example amongst numerous South-American *Scolyti* that I have examined. The elytral sculpture is remarkable; the seriate punctures commonly found on each interstice are fused to form a stria indistinguishable from the true striæ, so that the number of the latter and of the interstices is apparently doubled. There is no other described *Scolytus* for which it can be possibly mistaken.

SCOLYTOPSIS, gen. nov.

Differt a *Scolyto* elytris leviter convexis, circa marginem apicalem non impressis, ad latera supra metasternum fortiter emarginatis; abdominis segmentis tribus ultimis sursum reflexis.

In the structure of the head, antennæ, and legs this genus does not differ from *Scolytus*. The prothorax is similarly margined at the base and sides, the lateral border being somewhat more oblique. The elytra are gently convex above from base to apex, without the submarginal impression found in all species of *Scolytus*; their lateral border is very deeply excised opposite the metasternum, the borders of the excision, together with the side-margin of the prothorax, forming an obtuse triangle, the apex of which is behind the humeral prominence, and joining the horizontal portion in a rounded angle, just before the hinder extremity of the metathorax. The metasternum is not very long, its episterna are very wide, and are separated behind from the epimera by an indistinct oblique suture. The abdominal flexure commences at the base of the 3rd segment; the first two are longer than the remaining segments, and are closely connate, the suture being curved towards the apex, and distinct only at the sides. The 3rd and 4th segments are very short, not equal together to the 5th.

The genus contains one species.

1. **Scolytopsis puncticollis,** sp. n. (Tab. V. figg. 10; 10 *a*, profile.)

Oblonga, nigra, elytris subpiceis; prothorace anterius contracto, nitido, medio discrete subtilius, lateraliter conferte variolose punctato; elytris prothorace sesqui vix longioribus, subopacis, punctato-striatis, interstitiis lineato-punctatis vel substrigosis, versus apicem breviter seriato-squamosis.

Mas. Fronte pilis fulvis dense comata.

Long. 2·5–2·8 millim.

Oblong, black, with the anterior border of the prothorax reddish, and the elytra obscure piceous. Front (♂) concealed by a dense marginal fringe of decumbent fulvous hairs brushed down to the mouth; front (♀) subconvex, impressed along oral border, strigose, subcarinate towards mouth. Prothorax as long as wide, its base truncate, with a raised margin external to a row of deep punctures, sides little rounded behind the middle, subconstricted in front, apex obtusely rounded; disc glabrous, shining, its punctuation very coarse and variolose at the sides, sparser but not fine towards the middle, median line impunctate,

not elevated. Scutellum punctiform, deeply situate. Elytra narrower than the prothorax and not quite one-half longer, subtruncate, and not margined at base, the shoulders prominent, the sides sinuate but not contracted towards the obtusely-rounded apex; dull, with close weakly-impressed striæ, their punctures strong and confluent at base, weaker behind, interstices narrow and subconvex, with single rows of similar punctures bearing scattered squamiform setæ, chiefly towards apex. Legs piceous or rufescent. Underside piceous; the thorax and first two abdominal segments with coarse punctures bearing minute tufts of hair, remaining segments rugose.

Hab. GUATEMALA, Torola, Las Mercedes, Zapote, Rio Maria Linda (*Champion*).

A dozen specimens were taken at various adjoining localities; I have also seen it from Mexican tobacco-refuse. It has quite the appearance of a somewhat elongate *Scolytus*, but the generic characters separate it very decidedly from that genus, and indicate it as a link between the Scolyti and Camptoceri.

Subgroup II. CAMPTOCERI.

Camptocérides, Lacordaire, Gen. Col. vii. p. 366 (*ex parte*).

The Camptoceri are very closely allied to the true Scolyti, but are without the abrupt dorsal flexure of the abdomen, which is regularly recurved. The antennal funiculus is furnished, usually in the male alone, with long stout cirrate hairs, which curve round the lower border of the club; these are sometimes present in the female, when they are much shorter and finer. The club is flattened, variable in shape, and very indistinctly articulate, the sutures being usually imperceptible, unless the organ is mounted in balsam, which usually brings out a single suture towards the base, rarely crossing the club, and generally not so strongly flexed as in *Scolytus*.

The legs are constructed much as in the latter genus, the tibiæ being furnished with a well-developed apical mucro above the tarsal articulation; at the base of this mucro, and on its outer side, there is present, in the middle and hinder pairs of tibiæ, a small second tooth, which in the larger species of *Camptocerus* may be so reduced as to be hardly discernible.

From this subgroup, as here delimited, must be excluded the Palæotropical genus *Diamerus*, Er. (*Acanthurus*, Eichh.), referred to it by Lacordaire, of which the true affinities seem quite doubtful.

The Camptoceri are exclusively confined to tropical and subtropical America, and have been divided into four genera, of which *Cnemonyx* is not found within our limits. These genera are ill-defined, and, after carefully examining the type species, though necessarily without dissection, I cannot distinguish them on precise characters.

Tarsi not elongate, the 3rd joint bilobed or cordate.

Prothorax strongly and abruptly narrowed in front, with extremely close fine uniform punctuation; club oblong or obovate: size moderately large . . *Camptocerus.*

Prothorax gradually rounded and narrowed in front, with relatively stronger, sparser unequal punctuation: size small.

Club subsecuriform, its lower margin strongly rounded, the upper margin nearly straight . . . . . *Ceratolepis.*
Club obovate, regular . . . . . *Loganius.*
Tarsi elongate, the 3rd joint simple . . . . . [*Cnemonyx.*]

CAMPTOCERUS.

Camptocerus, Latreille, Règne anim. ed. 2, v. p. 91; Lacordaire, Gen. Col. vii. p. 368; Chapuis, Syn. Scol. p. 50 (Mém. Soc. Liége, 1873, p. 258).

An interesting genus, which contains the first Scolytidæ described from America. Fabricius (Syst. Eleuth. ii. pp. 392, 393) diagnosed five species of *Hylesinus*, which Erichson subsequently referred to this genus; of these two alone were recognized by Chapuis, who added three more, of which *C. cinctus* may be identical with *Hylesinus fasciatus*, Fabr.

Thus the number of described species does not exceed eight, and of these *C. æneipennis*, Fabr., alone is common in collections. It is surprising that no more have ever been described; for Scolytidæ, they are striking in appearance.

The genus is South American, and one species only has strayed into our region.

1. **Camptocerus auricomus,** sp. n. (Tab. V. figg. 11, ♂; 11 *a*, front; 11 *b*, portion of elytral surface: 12, ♀; 12 *a*, front.)

Ovalis, postice angustatus, breviter pilosus; prothorace transverso, dense subtiliter punctato; elytris tenuiter striatis, interstitiis dense squamosis, squamis ad apicem longioribus vel subsetosis.

Mas. Piceo-ferrugineus, fronte excavata, pilis aureis bifasciata, margine orali tuberculato; elytris flavo-squamatis versus apicem fascia transversa obscuriore obsolete notatis.

Long. 3·8 millim.

Fem. Piceo-nigra, fronte convexa; prothorace versus apicem aciculata; squamis elytrorum fuscis, ad basin et in plaga postica pallide flavis.

Long. 2·9–3·6 millim.

Ovate, narrowed from the middle of the prothorax to the hinder extremity, red-brown (♂) or pitchy-black (♀). Front (♂) broadly excavate, the excavation sharply limited, dull and furnished with two bands of decumbent yellow hairs, epistoma with a median tubercle above a brush of yellow cilia; antennæ fuscous-brown, the club darker, somewhat trigonate in shape, pubescent, with traces of one or more strongly curved sutures, scape much thickened at apex, funiculus stout, somewhat twisted, joints 2–7 furnished with long stout cirri, reaching to the apex of the club. Front (♀) convex, dull, shortly pubescent, with traces of a carina over the fringed mouth; antennæ testaceous-brown, shorter and more slender, the funiculus much shorter, not appendiculate, the club more regularly ovate, pubescent, with indistinct sutures. Prothorax transverse, widest in the middle, strongly bisinuate at base, and subcircularly rounded at apex; disc with thin decumbent pubescence, yellow (♂), fuscous (♀), and a few scales towards the apex, very finely and closely punctate, the apical half (♀) longitudinally strigillate. Elytra a third longer than the prothorax, and as wide at the base, thence narrowed to apex; finely striate, the interstices flat, closely squamous; the scales (♂) large, semierect, long and setiform on the declivity, yellow, darker over an indistinct transverse vitta towards the apex, the scales (♀) shorter, setiform but not elongate on the declivity, fuscous-black, and pale yellow over a triangular basal patch and another on the declivity. Underside piceous red (♂), last three ventral segments fringed with long yellow hairs; piceous-black (♀), with shorter and darker fringes. Legs concolorous.

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

This fine species, taken in fair numbers at the Volcan de Chiriqui, is closely allied to *C. squammiger*, Chap. The male of the latter species (of which sex I have seen four examples) has no trace of a tubercle on the epistoma; the elytral scales are less brilliantly yellow, and are short throughout, not elongate and bristly towards the apex, and the abdomen is fringed with short hairs. I cannot separate the females with certainty. They exhibit corresponding differences, but in a less degree.

CERATOLEPIS.

Ceratolepis, Chapuis, Syn. Scol. p. 52 (Mém. Soc. Liége, 1873, p. 260).

The genus *Ceratolepis* was formed to include a species from Brazil; of this insect, *C. jucunda*, Chapuis's collection contains a single male in very bad condition. His generic diagnosis differs in no respect from that of *Camptocerus*, except that the phrase "*Tarsorum articulus* 1 *duobus sequentibus subæqualis*" is altered in its application to *Ceratolepis* by the substitution of "*æqualis*" for "*subæqualis.*" It becomes therefore difficult to say in what points *Ceratolepis* is distinct. Still there is a clear difference of facies between *C. jucunda* and the species of *Camptocerus*, and I include in this genus one species from Panama and two, probably from Mexico, which have been found in tobacco-refuse, all of which have the same general features as the type species.

These insects agree in possessing the following characters:—Head less strongly rostrate than in *Camptocerus*, less deeply impressed in the male, the margins of the impression not contiguous to the ocular border. Funiculus 7-jointed, the joints transverse, scarcely wider towards the apex, not much flattened, with delicate cirri not longer than the club, and, according to Chapuis, present in the male alone; club large, rounded-securiform, its lower border being strongly rounded, the upper being nearly straight and bearing the funicular articulation above the base, its surface without distinct sutures, but with an oblique suture visible in balsam-mounted specimens, beginning near the base of the lower border and running forwards and upwards to the middle line. Sides of the prothorax curved throughout, its punctuation strong, especially towards the sides. (In *Camptocerus* the prothorax is parallel-sided to near the apex and then abruptly contracted; its punctuation is very fine and not stronger towards the sides except in *C. costatus*.) First tarsal joint long, the third bilobed or in the smaller species widened and emarginate at its extremity.

The genus *Cnemonyx*, Eichh., agrees with *Ceratolepis* in having a subsolid club, without evident sutures; but the single species known has slender elongate tarsi, the third joint of which is quite small and not widened laterally. In appearance it is like a *Carphoborus* or other small Hylesinid, and has the lateral border of the prothorax less sharply defined, its punctuation subrugose, and the elytra separately convex, subelevated and crenate at base.

1. Elytra without series of conspicuous bristles . . . . . 2.
   Elytra with distinct rows of erect bristles towards apex . . . *errans*, sp. n.
2. Interstices of the elytra finely pubescent, without elevated rugæ. [*jucunda*, Chap.]
   Interstices with transverse elevated rugæ . . . . . *maculicornis*, sp. n.

1. **Ceratolepis maculicornis**, sp. n. (Tab. V. fig. 13.)

Oblongo-ovalis, niger, elytris piceis, antennis et pedibus rufescentibus; prothorace nitido; elytris subopacis, punctato-striatis, interstitiis subconvexis ad basin multipunctatis et rugosis, post medium rugulis elevatis et setis brevissimis in seriebus singulis asperatis.

Long. 2·6 millim.

Oblong-oval, black, the elytra deep piceous. Front dull, rugose, flattened, shortly pubescent; antennæ testaceous-brown, the club a little darker, broadly obovate and spotted with minute tufts of light pubescence. Prothorax about as long as broad, semi-elliptical, with indistinct apical contraction, the base bisinuate, without evident border; surface sparsely pubescent at sides, strongly and closely punctured, the punctures more or less conjoined by slight longitudinal strigæ and much coarser at the sides, median line indistinct, not elevated, interspaces reticulate over the apical third. Elytra one-third longer than the prothorax, separately rounded and not margined at base, the sides slightly rounded to the posterior third, thence more strongly; surface rather dull, punctate-striate, the striæ strong, the punctures small and indistinct, interstices subconvex, rugose and multipunctate before middle, thence with single series of fine transverse elevations bearing very short blunt setæ. Underside piceous, finely rugose, and thinly pubescent. Legs piceous-red.

Hab. Panama, Tolé (*Champion*).

The three examples taken appear to be females. The species approaches *Loganius flavicornis*, Chap., from which it may be distinguished by the absence of carinate interstices towards the apex of the elytra.

2. **Ceratolepis errans**, sp. n. (Tab. V. fig. 14, antenna, ♂.)

Mas. Ovalis, piceus, prothorace partim, elytris pedibusque ferrugineis; fronte impressa, dense fulvo-villosa; prothorace subtransverso, dense fortiter punctato; elytris punctato-striatis, interstitiis subconvexis, ad basin rugulis elevatis transversis, in declivitate tuberculis setigeris ornatis.

Long. 2 millim.

Male. Short oval. Head piceous, scarcely rostrate, front with a circular impression, tufted with dense fulvous hairs chiefly round the margins; antennæ testaceous, the funicular cirri moderately stout, the club infuscate, rounded-securiform, pubescent, except for a small spot at the base. Prothorax subtransverse, bisinuate and finely margined at base, elliptically rounded at the sides; piceous or red-brown, with the disc infuscate, closely and deeply punctured, with a smooth spot on either side, the side-margins fine, crenate. Scutellum punctiform, piceous, rugose. Elytra one-fourth longer than the prothorax, rounded but not margined at the base; uniform red-brown, deeply striate, the striæ obsoletely punctured, interstices convex, with a single series of elevated tubercles from base to apex, bearing short upright setæ. Underside piceous-brown, coarsely punctured, the mesosternum rather prominent in front. Legs reddish, the third tarsal joint not evidently bilobed.

Hab. ? Mexico (*coll. Blandford*).

Several examples have been sent me by M. Grouvelle, all collected in Paris from the refuse of Mexican tobacco. I have little doubt that it is a member of the Central-American fauna.

LOGANIUS.

Loganius, Chapuis, Syn. Scol. p. 52 (Mém. Soc. Liége, 1873, p. 260).

The only point which I can find to separate *Loganius* from *Ceratolepis* is the structure of the antennal club, which in *Loganius* is regularly ovate, with the lateral borders almost alike in curvature, and with the funiculus attached at the basal point. Its surface shows signs of one or two curved sutures crossing it, less evident in the Central-American species than in the type, *L. flavicornis*. In that insect the two curved concentric sutures are very distinct, perhaps owing to the pallid colour of the club and its thin pubescence. These sutures appear to be quite superficial, for in *L. panamensis* the single suture which extends from one side to the other appears in a balsam-mounted specimen to reach to the middle only, as in *Ceratolepis*. These two genera may require to be united, or to be kept separate on other characters than that of the club alone; but to do this would necessitate examination of richer material than that available, and dissection of examples of each type species. In *L. panamensis* and *L. exiguus*, the funiculus is cirrate in both sexes, the cirri in the male being stouter and reaching to the apex of the antennal club, much finer and shorter than the club in the female.

Two species of *Loganius* have been described—one, *L. flavicornis*, Chap., from Cumana, the other, *L. ficus*, Schwarz, from Florida. The latter, which has been placed provisionally only in this genus, I have not seen.

1.	Interstices of the elytra carinate	[*flavicornis*, Chap.]
	Interstices not carinate	2.
2.	Form elongate, subcylindrical; base of the elytra brown	*longicollis*, sp. n.
	Form ovate or oblong-ovate; entirely black	3.
3.	Elytra pubescent	*panamensis*, sp. n.
	Elytra glabrous	*atratus*, sp. n.
	Elytra with seriate bristles towards apex	4.
4.	Prothorax shining, simply punctured	*exiguus*, sp. n.
	Prothorax sericeous, closely strigillate between the punctures	*minusculus*, sp. n.

1. **Loganius longicollis**, sp. n. (Tab. VI. fig. 1, antenna.)

Oblongus, subcylindricus, nigro-piceus, prothoracis marginibus et elytrorum basi rufescentibus; fronte fusco-villosa; prothorace latitudine longiore, subnitido, sat dense subtiliter punctato, linea media lævi; elytris ad basin subnitidis, punctato-striatis, interstitiis planis, angustis, punctatis, in declivitate seriato-setosis.

Long. 2·5 millim.

Oblong, subcylindrical, piceous-black, the anterior and posterior margins of the prothorax and the basal third of the elytra piceous-red. Front flattened, with close fuscous pubescence, vertex dull, punctured; antennæ piceous-red, cirri of the funiculus fine, club obovate, fuscous. Prothorax longer than broad, its base subbisinuate and not margined, the sides feebly constricted towards the apex; slightly shining, with close, rather fine punctuation, absent over a narrow median line and not stronger at the sides, the interspaces substrigose behind, reticulate over the apical part, which bears a few short hairs. Scutellum small,

rounded, not depressed. Elytra a little narrower than the prothorax, and nearly one-half longer, almost truncate and finely margined at base, humeral prominences small, the sides parallel to the posterior third, the apex circularly rounded; surface shining over the anterior third, then dull, with strong punctured striæ, shallow at the base, interstices narrow, flat, transversely rugose, punctured in irregular rows, subtuberculate and bearing short erect setæ towards apex. Underside finely punctured and pubescent; the legs obscurely reddish.

Hab. ? MEXICO (*coll. Blandford*).

One example has been sent me by M. Grouvelle, from Mexican tobacco. I am uncertain as to the sex, as the antennal cirri appear too fine for a male, whereas the front, though scarcely impressed, is villous, usually a male character. In the single specimen I am unable to make out the sutures of the club, but its shape decides me to refer the insect to this genus and not to *Ceratolepis*. In appearance *L. longicollis* is like *L. flavicornis*, Chap., more than any other species, but it is more elongate and has not the interstitial carinæ which distinguish that insect.

2. **Loganius panamensis,** sp. n.

Oblongo-ovalis, niger; antennis fusco-testaceis, clava obscuriore; tibiis anticis tarsisque rufescentibus; prothorace haud transverso, parcissime pubescente, nitido, punctato, punctis in antica parte strigosis; elytris pube brevi vestitis, tenuiter striatis, interstitiis anterius rugosis posterius multipunctatis.

Mas. Fronte impressa, breviter bifasciata.

Fem. Fronte haud impressa.

Long. 2–2·5 millim.

Oblong-oval, black. Front (♂) impressed, the impression circular and subconcave, closely and rugosely punctured, above with a small fasciculus of fulvous or yellow hairs on either side, below separated from the epistoma by a transverse ridge; front (♀) flat, but not impressed, dull, closely reticulate and punctured, subglabrous; antennæ pitchy-testaceous, funiculus appendiculate in both sexes, the cirri (♀) shorter and finer, club obovate, with a single curved suture, infuscate and entirely pubescent. Prothorax as long as broad, bisinuate and feebly bordered at base, the sides elliptically rounded, the apex obtuse; shining, sparsely hairy anteriorly, with rather close oblong punctures, the interspaces strigose towards apex, nearly smooth towards base, median line distinct throughout, elevated in front. Scutellum small, triangular, rather convex. Elytra scarcely as wide as the prothorax and little longer, with sinuate and elevated basal borders, nearly parallel-sided to the middle, thence obliquely rounded; surface very gradually declivous from before the middle, finely striate; interstices nearly flat, rugose at base, then finely multipunctate, covered with short decumbent fuscous or yellowish bristly hairs, the sutural interstice depressed at the base. Underside black, punctured, and shortly pubescent. Legs piceous-black, the tibiæ, especially the anterior pair, and tarsi reddish.

Hab. PANAMA, Tolé (*Champion*).

Sixteen specimens.

3. **Loganius atratus,** sp. n. (Tab. VI. fig. 2.)

Oblongo-ovalis, nitidus, glaber, ater, antennis pedibusque piceis; prothorace subtransverso, anterius subconstricto, subtiliter discrete, ad latera fortius punctato, linea media lævi; elytris striato-punctatis, interstitiis subconvexis, uniseriatim, ad basin saltem biseriatim, punctatis.

Long. 2·4 millim.

Oblong-oval, deep black, shining, glabrous above, with exception of the head, which is dull, alutaceous, and rather closely punctured; front with a shallow subtriangular impression over the mouth, its margins

shortly pubescent; antennæ fusco-piceous, cirri of the funiculus fine, club rounded-oval, with a single evident suture. Prothorax subtransverse, slightly constricted in front, finely margined and bisinuate at base, the sides and apex slightly and separately rounded; with very fine scattered punctures, coarser at the extreme sides, interspaces with traces of strigillation, the median line impunctate, not elevated. Scutellum rounded. Elytra a fourth longer than the prothorax and equal in width, finely margined at the base, subparallel-sided to the middle; with rows of punctures, which appear striate in certain lights only, rather stronger at the base, interstices subconvex, with single series of fine punctures, usually double at the base, and of small tubercles on the declivity. Underside black, thinly pubescent. Legs pitchy-black, the knees and tarsi reddish.

Hab. Panama, Bugaba, Tolé (*Champion*).

The three specimens taken have the cirri of the funiculus short and fine; nevertheless they have a slight frontal impression, so that their sex is uncertain.

The prothoracic punctuation varies, particularly towards the sides, where it is much stronger in one specimen than in the other two.

4. **Loganius exiguus,** sp. n.

Oblongus, nitidus, niger, antennis et pedibus rufescentibus; prothorace haud transverso, subtiliter punctato, basi marginato; elytris punctato-striatis, interstitiis squamis erectis uniseriatim instructis.

Long. 1·7 millim.

Mas. Fronte impressa.

Oblong, black, shining. Front (♂) impressed, shining and transversely carinate between the antennæ; front (♀) dull, subconvex, shortly pubescent; antennæ testaceous-brown, funicular cirri conspicuous (♂), fine (♀), club infuscate, oval, with two evident curved sutures. Prothorax as long as broad, little narrowed in front, base finely margined, sides and apex separately rounded; disc with a few squamous hairs at the sides and apex, finely punctate, the punctures a little coarser laterally, and absent over the middle line, interspaces with reticular groundwork. Elytra one-third longer than the prothorax, finely margined at the base, subparallel for the anterior half, thence obliquely narrowed towards the apex; punctate-striate, interstices subconvex, on the hinder half with single rows of fine punctures bearing short squamose setæ. Underside black, strongly punctured along the front of the metasternum. Legs piceous-red, the tibiæ slender, with the third tarsal joint bilobed.

Hab. Panama, Bugaba (*Champion*).

Of this little species two males and a female were taken. It approaches *L. atratus* in form and sculpture, but it is very much smaller and separable by the possession of setæ on the elytra.

5. **Loganius minusculus,** sp. n.

Oblongo-ovalis, subnitidus, niger, antennis tarsisque testaceis; prothorace haud transverso, semielliptico, dense longitudinaliter punctato-strigillato; elytris obsolete punctato-striatis, interstitiis subconvexis versus apicem breviter uniseriatim setosis.

Long. 1·6 millim.

Oblong-oval, black. Head dull; front thickly pubescent on either side towards vertex and transversely carinate above mouth; antennæ brown-testaceous, funiculus obsoletely appendiculate, club rounded-oval, with one evident suture and traces of a second. Prothorax as long as broad, bisinuate and finely margined at base, the sides obliquely rounded, the apex obtuse; disc with a few short stout hairs towards apex, with oblong punctures and close longitudinal strigillation. Scutellum rounded. Elytra as wide

as prothorax and a third longer, closely applied at base, subparallel-sided to middle, thence obliquely incurved, separately rounded at apex; shining, striate, the striæ weak and obsoletely punctured, interstices subconvex, with a few indistinct punctures and rugæ, and behind middle with a single series each of very short scale-like bristles. Underside black, finely reticulate and punctured. Legs black, tarsi testaceous; spines of middle and posterior tibiæ quite straight.

Hab. Panama, Volcan de Chiriqui (*Champion*).

But one example, apparently a male, of this distinct little species was obtained. The strigillation of the prothorax gives it a certain likeness to a small *Cnesinus*, from which genus the appendiculate funiculus and the mucro of the anterior tibiæ clearly separate it.

Subgroup III. BOTHROSTERNI.

The distinguishing characters of this subgroup are as follows:—Antennæ inserted at the sides of the rostrum in a fossa, bounded in front by a ridge and continued on to the gula by a sulcus, with a moderately long, not strongly clavate scape; the club oblong or oval, flattened, 4-articulate, crossed by straight or curved sutures, which with the apical joint are pilose *. Maxillæ with a narrow internal portion, its tip rounded, the armature consisting of flattened spines; maxillary palpi with joints successively decreasing in width, the first two very short and transverse, the third much longer than broad. Mentum as broad as long, shield-shaped, truncate at the apex; ligula inserted at its base, narrowed apically and extending a little beyond its apex, its tip pilose; labial palpi with the first joint ample, conical, the second very short, transverse, the third narrow and longer than broad. Prothorax with or without a raised side-margin, in the latter case the flanks are impressed and the side-margin is obscurely defined; its surface punctured or usually strigillate, its base more or less overlapped by the elytra. Tibiæ not stout, the an erior pair dilated towards apex, of which the upper angle is prolonged beyond the tarsal articulation into a flattened lobe, bifid and produced into recurved spines, upper margin with a single tooth towards apex; middle and hinder tibiæ with a small simple or bifid tooth at the upper apical angle representing the apical process of the anterior tibiæ, and usually ill-developed, their upper margin with one, rarely two, minute spinous teeth. Tarsi short, the first three joints stout, subequal, the third not or scarcely widened, emarginate at tip, last joint shorter than the preceding. Body oblong-oval or elongate, rarely with subsquamous pubescence.

The Bothrosterni have been retained in the Hylesinides by both Chapuis and Leconte. Though less intimately related to the Scolyti and Camptoceri than those subgroups are to each other, their connexion with them appears to me to be undoubted; and the smaller species of *Loganius* approach the Bothrosterni so nearly in appearance as to require a careful scrutiny of the antennæ and tibiæ before their place can be determined. The characteristic tibial structure of the present subgroup is always difficult to observe on the middle and hind legs, and may be overlooked in small forms. This, indeed, was done by Chapuis in *Nemophilus* (*Cnesinus*), although the processes are easily visible in his type specimen of *N. strigillatus* (=*C. strigicollis*); and even Leconte and Horn appear not to have noticed the essential identity in structure between the tibiæ of *Bothrosternus* and *Cnesinus*. The mouth-parts show no material differences in species of three genera examined.

* As with other Scolytidæ possessing a four-jointed club, the apical suture is quite indistinct, being represented only by a row of hairs, and entirely untraceable in a balsam-mounted specimen.

Well-marked sexual characters are usually present in the front of the males, of which sex I have examined the genitalia in *Bothrosternus sculpturatus* and *Pagiocerus rimosus*. The ædeagus and its accessory parts are of complex type, and their exact structure can hardly be made clear without dissection of numerous specimens.

The Bothrosterni are confined to the Southern United States and Tropical America; their known genera are four in number.

Prothorax with a defined side-margin.	
Sutures of the club transverse; prothorax shining and punctured	*Bothrosternus.*
Sutures of the club curved; prothorax closely strigose	*Eupagiocerus.*
Prothorax with no defined side-margin, but usually with a fold above the femoral impression.	
Sutures of the club curved; rostrum narrower than the front; body oval . .	*Pagiocerus.*
Sutures of the club straight; rostrum scarcely narrower than the front; body oblong	*Cnesinus.*

BOTHROSTERNUS.

Bothrosternus, Eichhoff, Berl. ent. Zeitschr. 1868, p. 150; Chapuis, Syn. Scol. p. 24 (Mém. Soc. Liége, 1873, p. 232).

Head not strongly narrowed towards the mouth; eyes narrow, remote; antennal ridges not very prominent. Funiculus not strongly increasing in width towards apex; club acuminate-oval with straight sutures. Prothorax and elytra nearly glabrous, the former shining, punctured, with a carinate side-margin from base to middle; elytral striæ sinuate and the interstices carinate or subcarinate towards apex, the third more strongly elevated. Apical processes of middle and hind tibiæ short, bifid; the spines on the upper border indistinct.

Five species have been described, of which one, *B. hubbardi*, Schwarz, is North American. No examples of this insect nor of *B. truncatus*, Eichh., have been procurable for examination, and it is not certain whether the former belongs to the genus at all.

1. **Bothrosternus sculpturatus,** sp. n. (Tab. VI. figg. 3; 3 *a*, antenna; 3 *b*, mentum and ligula; 3 *c*, fore leg.)

Oblongo-ovalis, nitidus, glaber, ater, antennis tarsisque rufescentibus; elytris striatis, striis ad basin modo distincte punctatis, punctis rugulis transversis separatis, interstitiis ad basin rugose punctatis, dein nitidis, carinatis.

Mas. Fronte nitidissima, lævi; rostro lateraliter impresso et plaga villosa, rufa ornato.

Fem. Fronte parce punctata; rostro ad basin fortiter impresso.

Long. 4 millim.

Oblong-oval, deep black, shining, glabrous. Head punctured; front (♂) with a circular impunctate, polished, interocular area; rostrum carinate at apex, impressed on either side and clothed with dense fulvous pubescence: front (♀) less shining, sparsely punctured; rostrum carinate at apex, deeply impressed at base and thinly pubescent. Prothorax transverse, constricted towards apex, sparsely punctured towards the middle, more strongly and closely towards the sides, the median line impunctate. Elytra a little wider at base than the prothorax and less than twice as long, their basal margins rounded and finely crenate, sides subsinuate, apex rounded; surface striate, the striæ rather wide, indistinctly punctured,

except at the base of the inner striæ, the punctures divided by well-marked transverse elevations; interstices convex, rugose and multipunctate from base to middle, acutely carinate on the declivity, the third elevated towards the apex.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Eight examples. The species is allied to *B. costatus*, Chap., but is larger and more robust, the prothoracic punctures are stronger and less close, confluent and not strigose towards the sides, and the inner striæ of the elytra are manifestly punctured at base.

2. **Bothrosternus bicaudatus,** sp. n. (Tab. VI. fig. 4, apex of elytra.)

Oblongo-ovalis, glaber, nitidus, ater, antennis tarsisque rufescentibus; elytris utrinque ad apicem in lobum rotundatum crenatum productis, supra striatis, interstitiis post medium argute costatis et subtuberculatis.

Long. 3 millim.

Mas. Fronte inter oculos carinata; rostro plaga fulvo-villosa ornato.

Allied to *B. sculpturatus*, but distinguished from that and all other described species by the prolongation of the apices of the elytra into two short lobes, of which the outer borders are the longer, rounded and crenate, the inner borders forming the sides of a common subcircular emargination. Front (♂) with a transverse interocular carina, rostrum clothed with dense fulvous pubescence; front and rostrum (♀) flat, thinly pubescent. Prothorax rather abruptly narrowed at the middle, very finely and closely punctured, with a fine reticular ground-work, denser towards the apex, which is dull and sericeous. Second ventral segment prominent, the last three slightly flexed as in *Scolytus*, the last (♂) impressed.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Three examples. A curious and interesting form.

EUPAGIOCERUS, gen. nov.

Oculi sat magni, emarginati; rostrum latum. Clava antennarum suturis curvatis instructa. Prothorax lateraliter acute marginatus, supra dense strigosus. Elytra ad basin subtransversa, interstitiis haud carinatis. Tibiæ anticæ fortius spinosæ; tarsi validi, articulo 3° emarginato.

This genus is established for a single species which links *Bothrosternus* to *Pagiocerus* without falling quite appropriately into either genus. The rostrum is much wider than in *Pagiocerus*; the eyes are tolerably large and emarginate. The funiculus is widened towards the apex; the sutures of the club are curved and the joints imbricate, but it is elongate as in *Bothrosternus* and not so compact an oval as in *Pagiocerus*. The prothorax has a sharp side-margin and is sculptured as in *Cnesinus*. The basal border of the elytra is narrowly elevated and subtransverse, being neither produced over the base of the prothorax nor crenate; the interstices are not costate, and the third is not prominent behind as in *Bothrosternus*. The spines of the fore tibiæ are large; the apical processes of the middle and hind pairs are small and bifid, the upper margin of the former has two small spines, that of the latter is unarmed.

1. **Eupagiocerus dentipes,** sp. n. (Tab. VI. figg. 5; 5 *a*, antenna.)

Oblongus, subnitidus, subglaber, piceo-niger vel piceus, capite nigro; prothorace dense punctato-strigoso, elytris striatis, interstitiis subconvexis, tenuiter multipunctatis, in declivitate angustatis, seriatim tuberculatis et brevissime setosis, declivitate ipsa subimpressa.

Long. 3 millim.

Oblong, nearly glabrous, not strongly shining, piceous-black or brown with head black. Rostrum rather wide, shining, with a subtriangular impression over mouth, fringed at the sides with erect fulvous bristles, vertex finely reticulate and punctured; antennal club infuscate, elongate-oval. Prothorax transverse, with the sides straight and subdivergent from base to middle, thence strongly rounded to apex but not constricted, lateral margin carinate to before the middle; surface with fine and very close strigose punctuation, flanks pubescent anteriorly. Scutellum rounded. Elytra a little wider at base than prothorax, and not quite twice as long, subparallel-sided to posterior third; surface subimpressed round the scutellum, striate, the striæ with traces of punctuation, wider posteriorly, interstices finely reticulate and multipunctate, flat at base, becoming subconvex about the middle, narrowed on the somewhat flattened declivity, feebly tuberculate and set with short decumbent setæ. Underside piceous, thinly pubescent. Legs piceous, apical process of the anterior tibiæ conspicuously bifurcate.

Hab. GUATEMALA, El Tumbador, Cerro Zunil (*Champion*).

Three specimens. The genera of Bothrosterni are not very clearly delimited, and this insect presents a curious combination of the features of the three previously described.

PAGIOCERUS.

Pagiocerus, Eichhoff, Berl. ent. Zeitschr. 1868, p. 148; Chapuis, Syn. Scol. p. 26 (Mém. Soc. Liége, 1873, p. 234).

The species of *Pagiocerus* are less elongate than those of allied genera, and have the head distinctly rostrate, the rostrum being narrowed and bordered at the sides by the acute ridges, marking the anterior limit of the deep antennal fossæ. The funiculus is widened towards its apex, the club is oval, compact, with curved sutures, the two shining basal joints occupying barely half its surface. The prothorax has no acute side-margin, and its sculpture consists of rounded or oval punctures, between which the interspaces are wrinkled so as to produce a strigose appearance. The spines of the anterior tibiæ are strong; the apical processes of the middle and hinder pairs are obsolescent and represented by a small spine only at the upper angle, the middle pair has two small teeth, the hinder one on the upper border.

Two species of *Pagiocerus*, both Neotropical, have been described, of which one has been found in Central America.

1. **Pagiocerus rimosus.** Tab. VI. figg. 6, ♂, front: 7, ♀; 7 *a*, front; 7 *b*, antenna.)

Pagiocerus rimosus, Eichh. Berl. ent. Zeitschr. 1868, p. 148[1]; Chap. Syn. Scol. p. 26 (Mém. Soc. Liége, 1873, p. 234)[2].

Ovate, moderately shining, varying in colour from ferruginous to piceous-black, usually piceous-black with the apical margin of the prothorax and the elytra brown. Rostrum (♂) somewhat longer than broad, deeply impressed over the mouth, and armed with a recurved spine, bituberculate at the base and separated by an arcuate impression from the front, which is longitudinally impressed and shagreened; rostrum (♀) broader, less deeply impressed, its spine reduced to a tubercle, its lateral ridges set with erect setæ, becoming longer towards the vertex (indistinct in the male), front subnitid and with a shallower impression between the eyes; antennæ ferruginous, the club infuscate. Prothorax subtransverse, the sides nearly straight behind, strongly rounded in front, and constricted behind the apex; disc convex, with close

substrigose punctuation, the median line smooth, not elevated, abbreviated and variable in width; the flanks impressed and strongly punctured behind. Elytra wider and one-half longer than the prothorax, their basal borders oblique, scarcely elevated or crenate, the sides subparallel to behind the middle, or subdilated, the apex rounded; surface striate, the striæ wide, sharply cut, crenate; interstices flat, narrowed towards the apex, with minute uniseriate transverse punctures, and behind the middle with short erect setæ. Legs red-brown.

Length 2·2–2·5 millim.

Hab. MEXICO, Vera Cruz [2]; GUATEMALA, Senahu in Vera Paz, El Tumbador, Cerro Zunil, San Isidro, Pantaleon, Mirandilla, Zapote (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).—COLOMBIA [2]; BRAZIL [2]; CHILI [2]; CUBA [1 2].

This species appears to be common and widely distributed in Tropical America, though Mr. Champion took but a few examples at each locality. The males appear to be constantly smaller than the females, and have the sculpture somewhat less strong; they are well distinguished by the little recurved spine on the rostrum. In the females the interocular space varies in depth and gloss; it is sometimes quite shining, without, however, approaching the high polish characteristic of the males in *Bothrosternus*.

CNESINUS.

Cnesinus, Leconte, Trans. Am. Ent. Soc. i. p. 171 (1868); Rhynch. N. Am. p. 378.
Nemophilus, Chapuis, Syn. Scol. p. 27 (1869) (Mém. Soc. Liége, 1873, p. 235).

In this genus are included those species in which the sutures of the antennal club are transverse, and the lateral margins of the prothorax, though usually fairly distinct, are not acutely bordered. The forms thus brought together vary in other respects: the rostrum is less marked than in the allied genera, except in one or two of the larger species; the eyes may be remote and narrow as in *Bothrosternus*, or larger, more strongly granulate, and approximate on the front. The prothorax is usually closely strigose, but is shining and punctured in one species. The form is usually elongate and slender, but this, as well as the degree of development of the tibial armature, depends on the size of the species. The spines of the front tibiæ are weaker than in the preceding genera, the middle and hind pairs are produced into a small point at the upper apical angle, usually without evident fissure, and have one minute tooth on the margin. Two species of *Cnesinus* are hitherto known from the United States and Venezuela respectively. In the subjoined table thirteen are given, of which ten, all but one being new, are natives of Central America; two from Venezuela are described in footnotes. The species are somewhat difficult to tabulate; two characters on which I have relied may be mentioned. In one division, to which *C. strigicollis* belongs, the prothoracic punctures are coarser and form by their confluence longitudinal strigæ, separated by interspaces which appear, with high amplification, as narrow ridges, intersecting each other at intervals to form a network. In a second division the punctures are finer and appear to be impressed in the surface, the inter-

spaces not standing out as ridges; the surface is consequently more shining. The other character is derived from the elytral pubescence; this is usually of two kinds —a single series of erect bristles along the middle of each interstice, and an irregular series of shorter and more decumbent hairs on either side of the mesial series. The degree to which each of these two forms of hairs is developed varies very much in different species. In *C. strigicollis* the mesial series is comparatively fine and escapes observation unless the insect is looked at sideways.

1.	Prothorax shining, its punctures neither close nor strigose	*punctatus*, sp. n.
	Prothorax with close strigose or aciculate punctures	2.
2.	Prothorax more or less dull, its punctures coarser, longitudinally confluent, and separated by narrow elevated interspaces	3.
	Prothorax slightly shining, its punctures fine, less confluent, the interspaces not elevated (except very feebly in *C. pullus*)	8.
3.	Elytral interstices divided by a sulcus into two narrow costæ . . .	*porcatus*, sp. n., and *costulatus*, sp. n.
	Interstices not sulcate	4.
4.	Form oblong-oval, prothorax evidently transverse, abdomen convex .	*lecontei*, sp. n.
	Form oblong, prothorax not or scarcely transverse, abdomen nearly flat	5.
5.	Eyes not closely approximate above	6.
	Eyes almost contiguous above, elytral setæ conspicuous from the base, the hairs very fine	[*ocularis*, sp. n.]
6.	Erect setæ of the elytra coarse, pale, and conspicuous	7.
	Erect setæ finer, dark and not conspicuous	*strigicollis*, Lec., [and *gibbus*, Chap.]
7.	Elytral setæ and hairs long, chaffy; size 3 millim.	*paleatus*, sp. n.
	Elytral setæ and hairs short and stout; size 2 millim.	*setulosus*, sp. n.
8.	Form elongate, elytra pubescent on the declivity	9.
	Form not elongate, elytra glabrous	*pullus*, sp. n.
9.	Elytral striæ shallow, pubescence hair-like	10.
	Elytral striæ deep, incised, interstices convex towards the apex, pubescence very short, subsquamous	[*teres*, sp. n.]
10.	Prothorax narrower at base than the elytra and widened towards the middle, its punctures confluent, strigose	*elegans*, sp. n.
	Prothorax as wide as the elytra, parallel-sided behind the middle, its punctures not confluent	*gracilis*, sp. n.

1. **Cnesinus punctatus**, sp. n. (Tab. VI. fig. 8.)

Oblongus, nitidus, piceus; prothorace transverso, sat subtiliter punctato, linea media lævi, punctis ad apicem solum subaciculatis; elytris punctato-striatis, striis postice profundioribus, interstitiis convexis, punctis subtilibus confuse notatis, in declivitate uniseriatim tuberculatis et longe setosis.

Long. 2·6 millim.

Oblong, piceous, shining, glabrous, the apex of the elytra excepted. Head black, finely reticulate and punctured; rostrum short, flat; mouth fringed, front pilose within the border of the eyes, the latter not approximate; antennæ ferruginous. Prothorax transverse, feebly constricted towards apex, sides straight behind, rather strongly rounded in front; disc rather finely and uniformly punctured, the punctures not dense nor strigose, indistinctly subaciculate at the apical and lateral margins only, median line well defined, smooth, not elevated. Elytra less than twice as long as the prothorax and a little wider at base, their basal margins scarcely rounded, elevated, the shoulders elevated, sides subampliated about the posterior third, apex circularly rounded; surface impressed throughout along the suture, striate, the striæ shallow at base, with small separate punctures, deeper towards the apex, with the punctures coalesced, interstices subconvex, with fine irregular punctures and a few transverse wrinkles, towards apex with a single series of small tubercles bearing long coarse setæ, shorter on the first interstice, and ceasing before apex, the third more prominent on the declivity. Underside piceous, punctured. Legs piceous-red; teeth of the tibiæ stout and short, the apical angles of the middle and hinder pairs distinctly produced.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Described from a single specimen. The character of the prothoracic sculpture will at once differentiate this species, which does not stand in close relationship to any other.

2. **Cnesinus porcatus,** sp. n. (Tab. VI. fig. 9.)

Subelongatus, subopacus, piceus vel niger, antennis tarsisque rufescentibus, breviter parce pubescens; prothorace transverso, dorso dense longitudinaliter strigoso; elytris striatis, striis ad basin punctatis, interstitiis angustis, per totum in costellas binas sulcatis, sulcis præcipue versus apicem seriato-pilosis.

Long. 3 millim.

Mas. Fronte nitida, a rostro carina transversa separata.

Fem. Fronte opaca, medio obsolete elevata.

Oblong, somewhat elongate, piceous or piceous-black. Head black, its vertex dull, closely reticulate, and finely punctured; front (♂) with a shining triangular surface, separated from the rostrum by a sharp interocular carina; front (♀) opaque and subelevated between the eyes, the latter not contiguous above; antennæ fusco-ferruginous, the funiculus little thickened apically. Prothorax rather broader than long, the sides nearly straight to the middle, thence rounded to the apex; thinly pubescent, closely strigose, with narrow elevated interspaces. Scutellum rounded, rugose. Elytra a little wider than the prothorax, nearly twice as long, separately rounded but not crenate at base, the sides subparallel to the hinder third, thence obliquely rounded; striæ rather wide and sharp, strongly punctate at the base only, interstices narrow, sulcate throughout, the sulci opaque, obsoletely punctate, set with short, yellow, seriate hairs, closer and stronger on the declivity, their margins subcostate and finely pubescent towards the apex. Underside piceous-black, pubescent, the abdomen more strongly. Legs piceous, with lighter tarsi; spines of the tibiæ not strong, the apical processes of the hinder pairs obsolete.

Hab. GUATEMALA, Cerro Zunil (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*). —VENEZUELA (*Moritz*).

Six specimens were taken by Mr. Champion, and I have seen others from Venezuela. It is a well-marked form, not capable of being confounded with any species except the next.

3. **Cnesinus costulatus,** sp. n.

Antecedenti similis, sed minor, pro portione brevior, convexior; totus niger, antennis tarsisque dilutioribus; striis elytrorum minus profundis, lateralibus ad basin fortius punctatis, sulcis minus pilosis.

Long. 2–2·3 millim.

Sexus notæ ut in antecedente.

Closely resembling *C. porcatus* in structure, but smaller, more convex, and less elongate; quite black, with the antennæ and tarsi alone lighter. Elytra relatively shorter, less obliquely rounded at apex, with shallower striæ, the bases of the lateral striæ more distinctly punctate, the pubescence paler and scantier. Sexual characters as in the preceding species.

Hab. Panama, Volcan de Chiriqui, Bugaba (*Champion*).

Nine specimens. This insect and the preceding afford one of those puzzling cases of which there are other examples in Central-American Scolytidæ, where two series of forms differ markedly in size, without intermediates, and yet present no prominent differences of structure. It is, of course, impossible without bionomical evidence to determine their value as species, but it seems desirable to indicate them by distinct names when they appear to be fixed varieties. In the series of these two *Cnesini* the dissimilarity in size is quite marked, and is accompanied by clear differences in the punctuation at the base of the lateral striæ.

4. **Cnesinus lecontei,** sp. n.

Oblongus, subopacus, brunneus, capite nigro; prothorace transverso, dense strigoso-punctato, linea media indistincte elevata; elytris striatis, interstitiis planis, multipunctatis, ad basin granulatis, post medium breviter flavo-pilosis et seriatim setosis, in declivitate haud angustatis.

Long. 3 millim.

Mas. Rostro impresso.

Oblong, not strongly shining, brown. Head black; rostrum (♂) with a cordate velvety pubescent impression, the front shining, pilose at sides only; rostrum (♀) scarcely impressed and not densely pubescent, the shining frontal area smaller, pilose; vertex closely punctured and dull in both sexes. Prothorax transverse, widest before base, subconstricted anteriorly, the sides rounded throughout; surface convex, with very close, fine, strigose punctuation, the median line fine but elevated throughout. Scutellum rounded, rugose. Elytra twice as long as the prothorax and a little wider, separately rounded, narrowly elevated and subcrenate at base, humeral angles obtuse, sides rounded throughout, more strongly towards apex; striæ narrow, incised, with indistinctly-expressed punctures, interstices rather wide, flat, finely rugulose, behind middle with fine, decumbent, yellow pubescence and a median row each of semi-erect setæ. Underside and legs ferruginous-brown, the former with rather close subsquamous pubescence; tibial spines moderate, the middle pair with a distinct apical process.

Hab. Guatemala, Quiché Mountains (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

In appearance this species approaches *Eupagiocerus dentipes*, and through it *Bothrosternus*; but it has no acute border to the prothorax, and the elytral interstices are not subcostate towards their apex. Nine examples.

5. **Cnesinus paleatus,** sp. n. (Tab. VI. fig. 10, antenna.)

Oblongo-cylindricus, subnitidus, piceus, pilis crassis aspersus; prothorace haud transverso, dense strigoso-punctato, linea media elevata lævi; elytris prothorace latioribus, punctato-striatis, interstitiis planis, subrugosis, uniseriatim punctatis et setis erectis instructis.

Long. 3 millim.

Oblong, cylindrical, piceous, slightly shining, clothed with short coarse hair. Head black, the rostrum impressed, bituberculate at base, fringed at the sides and apex with short hairs. Prothorax as long as broad, its basal angles obliquely rounded, the sides straight and subdivergent to before the middle, thence obliquely rounded to the more obtuse apex; surface moderately closely strigose, with a subcarinate median

line. Scutellum round, convex, punctured. Elytra a little wider than the prothorax, and nearly twice as long, separately rounded and crenate at base, the sides subparallel, slightly narrowed towards the apex; striæ rather fine, punctured, interstices flat and rather wide, very finely rugulose and multipunctate, with thin, coarse, decumbent pubescence and a median row each of stronger erect setæ; declivity oblique, impressed in middle, more shining, with feebler striæ and less pubescence. Apical process of anterior tibiæ long, its terminal spines short.

Hab. GUATEMALA, El Tumbador (*Champion*).

But one specimen of this species was taken. It is a distinct form, peculiar in the coarse chaffy-looking hairs.

6. **Cnesinus strigicollis.**

Cnesinus strigicollis, Lec. Trans. Am. Ent. Soc. 1868, p. 171 [1]; Rhynch. N. Am. p. 378 [2].
Nemophilus strigillatus, Chap. Syn. Scol. p. 27 (1869) (Mém. Soc. Liége, 1873, p. 235) [3].

Hab. NORTH AMERICA, Illinois [1], South Carolina [2], Texas [3].—MEXICO, Motzorongo in Vera Cruz (*Flohr*).

Through the kindness of Dr. Horn, I have been enabled to compare an authentic example of Leconte's species with Chapuis's type. In view of the close resemblance between certain species of *Cnesinus* the identification previously made required confirmation. Neither writer has thought it necessary to note the difference which exists between the two kinds of elytral hairs, but the setæ are not so conspicuous as usual.

C. gibbus, Chap., from Venezuela, is a nearly-allied form, represented in Chapuis's collection by a single example in poor condition. I have not been able to refer other specimens of *Cnesinus* to this species.

7. **Cnesinus setulosus,** sp. n.

Oblongus, subcylindricus, brunneus, capite nigro, flavo-pubescens; prothorace subquadrato, anterius angustato, dense strigoso-punctato et versus apicem parce squamoso; elytris punctato-striatis, interstitiis planis breviter squamose pilosis, per totum longius uniseriatim setosis.
Long. 2 millim.

Oblong, cylindrical, brown. Head black, finely reticulate and sparsely punctured; rostrum short, pubescent over the mouth and at the sides of the eyes, which are moderately approximated; antennæ red-brown. Prothorax equal in length and breadth, bisinuate at base, its hind angles rectangular, the sides parallel to before the middle, thence subcircularly rounded to apex; surface dull, with thin decumbent pubescence and a few pale scales towards apex and at sides, with very close strigose punctuation, the strigæ not long, the median line obsolete. Scutellum oval, not impressed. Elytra as wide as the prothorax and one-half longer, parallel-sided, the apex circularly rounded; surface cylindrical, strongly and obliquely declivous and convex at apex, punctate-striate, the punctures inconspicuous, interstices flat, with a close covering of short subsquamous hairs, denser towards apex, and a median row of longer, erect, flattened setæ. Underside brown, punctured and shortly pubescent. Legs piceo-ferruginous.

Hab. PANAMA, Tolé, San Lorenzo (*Champion*).

Three examples. This species, if in good condition, may be easily recognized by the pubescence, which is denser than in any other *Cnesinus* known to me; but when rubbed there is very little to distinguish it from *C. strigicollis* except its smaller size

and narrower, more parallel prothorax. The eyes are more nearly contiguous above *.

8. **Cnesinus elegans,** sp. n. (Tab. VI. fig. 11.)

Linearis, subnitidus, piceus, elytris ad basin dilutioribus; prothorace haud transverso, rimose punctato; elytris ad apicem fortiter convexe declivibus et in medio impressis, tenuiter striato-punctatis, interstitiis planis subtiliter punctato-rugosis postice seriatim setosis.

Long. 2·7 millim.

Elongate, subparallel, somewhat shining. Head black, scarcely rostrate, impressed and pilose over mouth; front shining, with setigerous punctures at sides, vertex punctured; eyes large, contiguous above, coarsely granulate. Prothorax as long as broad, widest in the middle, basal angles rectangular, sides straight and divergent to the middle, thence obliquely rounded to apex and subconstricted; surface moderately convex, deep piceous with apex ferruginous, thinly pubescent on the anterior margin, covered with longitudinal but scarcely strigose punctures, denser towards apex and on either side of a median subelevated line, interspaces not elevated, shining, in parts with traces of reticulation and finer punctures. Scutellum piceous-black, rounded, punctured. Elytra a little more than twice as long as the prothorax and wider at the base, with the margins not strongly rounded nor elevated, shoulders prominent, sides subparallel, apex circularly rounded; surface subcylindrical, convexly declivous at apex, which is impressed in the middle, piceous-brown, posteriorly darker, finely striate-punctate, the three inner striæ alone impressed throughout, the punctures very finely setigerous on the declivity, interstices flat, finely multipunctate, rugose at base, subconvex on the declivity, bearing each a row of stronger setæ, beginning on the two inner interstices as far forward as the middle. Underside piceous, punctured; abdomen thinly pubescent. Legs pitchy-brown; intermediate tibiæ with upper apical angle not produced.

Hab. MEXICO, Jalapa (*Höge*); GUATEMALA, Cerro Zunil (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).—VENEZUELA (*Moritz*).

Described from six specimens. This species is more elongate and shining than *C. strigicollis*, Lec.; the prothorax is less densely punctured, and the punctures are less strigose; the elytral interstices are shining and nearly smooth.

The specimens, as with *C. strigicollis*, show slight individual peculiarities which may or may not indicate sexual or specific differences; but the examples here grouped for description form a fairly well-defined aggregate.

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* In an arrangement of the genus, the following species may be placed next *C. setulosus*:—

Cnesinus ocularis, sp. n.

Elongatus, piceus, elytris brunneis, pedibus rufescentibus, vel totus fusco-ferrugineus; oculis magnis in fronte contiguis; prothorace latitudine vix longiore, conferte strigoso-punctato, linea media angusta elevata, parce pallide piloso; elytris anguste punctato-striatis, interstitiis planis, subtiliter rugulosis, uniseriatim setosis, declivitate vix impressa.

Long. 2·4 millim.

About the size of *C. strigicollis*, but much slenderer, intermediate in shape between it and *C. elegans*. The colour, when mature, similar to that of the former species. Eyes very large, approximate above; frontal pubescence similar but thinner, vertex dull. Prothorax narrower and relatively longer, more parallel-sided behind, the pubescence stouter and more conspicuous. Elytra with narrow punctured striæ, the interstices finely wrinkled, without elevated rugæ, with single series throughout of strong suberect pale bristles, rather longer behind, the decumbent hairs scarcely visible without the microscope; declivity very slightly impressed in the middle.

Hab. VENEZUELA (*Moritz, in Mus. Vind. Cæs.*).

9. **Cnesinus gracilis,** sp. n.

Elongatus, cylindricus, sat nitidus, subglaber, niger, antennis pedibusque piceis; prothorace longiore quam latiore, dense subtiliter reticulato et punctis oblongis notato; elytris ad apicem convexe declivibus, subtiliter punctato-striatis, interstitiis planis irregulariter seriatim punctatis, ad basin rugulosis, in declivitate angustatis, convexis et tuberculis setigeris seriatis ornatis.

Long. 2·2 millim.

Elongate, cylindrical, black. Head closely reticulate and finely punctured, scarcely rostrate, impressed and pubescent over mouth; eyes not approximate. Antennæ ferruginous-brown, the club infuscate. Prothorax a little longer than broad, bisinuate at base, the sides parallel to before middle, thence rounded to apex; surface cylindrical, anteriorly convex, subsericeous, minutely reticulate, and with the apical border alone shining, moderately closely covered with fine oblong punctures, not confluent nor strigose. Scutellum rounded, feebly punctured, not depressed. Elytra not wider than the prothorax and less than twice as long, their basal margins feebly rounded, not elevated, the shoulders not prominent, the sides subparallel, slightly narrowed behind, apex rounded; surface cylindrical, strongly but rather obliquely declivous at apex, finely punctate-striate, the punctures small, the striæ impressed at apex, sutural stria deeper throughout, interstices flat, with delicate transverse wrinkles, rather stronger at base, and irregular single series of minute punctures, narrowed and convex on the declivity and set with single series of short semi-erect pale bristles. Underside black, punctured, nearly glabrous. Legs piceous, with tarsi lighter; tibial teeth weak.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One example. I have seen three or four more from refuse tobacco *.

10. **Cnesinus pullus,** sp. n.

Oblongus, subnitidus, glaber, niger, antennis præter clavam genubus et tarsis ferrugineis; prothorace paullo longiore quam latiore, dense subtiliter strigoso-punctato; elytris haud profunde punctato-striatis, interstitiis planis rugulis transversis notatis, in declivitateconvexis, haud setosis.

Long. 1·7 millim.

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* The following species may succeed *C. gracilis*:—

Cnesinus teres, sp. n.

Elongatus, subcylindricus, subopacus, niger, elytris nonnunquam nigro-piceis, apice dilutiore, antennis pedibusque rufescentibus; prothorace oblongo, strigoso-punctato; elytris striis profundis, posterius latioribus exaratis, interstitiis planis, dense reticulato-punctatis, declivitate impressa, squamis cinereis ornata.

Long. 2 millim.

About the size of *C. gracilis*, but less elongate; black, the anterior margin of the prothorax and the elytra, especially at the apex, obscure piceous; antennæ and legs in part reddish. Head (♂) with a smooth frontal elevation, very shining and distinctly iridescent; front (♀) dull, slightly pubescent, with a shining median line towards the mouth; eyes not approximate. Prothorax longer than broad, subparallel behind the anterior third; with close, strigose, oblong punctures, sparser behind towards the sides. Elytra wider at base than the prothorax and two-thirds longer, cylindrical and gradually rounded at apex; with deep narrow incised punctured striæ, slightly widened posteriorly; interstices flat, glabrous before the declivity, dull, with close, fine sculpture of intermingled punctures and wrinkles; declivity squamous, with close, short, erect, cinereous scales, and impressed in the middle along the suture, the second interstice narrowed towards apex.

Hab. Venezuela (*Moritz*).

A distinct species, of which I have seen five specimens. Four, taken by Dr. Moritz, are from the Vienna Museum; the other stands in the Chapuis Collection under the MS. name *Nemobius* [sic] *teres*.

A curious feature of this species is the frontal iridescence in the male; it is noticeable, though less strongly, in *C. pullus* and in some *Hexacoli*.

Oblong, somewhat shining, deep black. Head shortly rostrate; front with a median polished impunctate space extending between the eyes to the oral border; rostrum subimpressed and punctured at sides, with short pubescence; vertex dull. Antennæ ferruginous, with club black; funiculus and club fringed with long hairs. Prothorax a little longer than broad, the sides straight and subparallel to middle, thence obliquely rounded and slightly constricted to apex; surface impressed at apex on either side and along basal margin, with close longitudinal strigæ separated by narrow interspaces, and replaced towards the apex by finer aciculation, median line fine, impunctate, not elevated. Scutellum punctiform, rugose. Elytra a little wider than the prothorax and not quite twice as long, their basal margins feebly rounded, elevated, and slightly everted, humeral elevations distinct, sides subparallel, apex circularly rounded; punctate-striate, the striæ well-marked but shallow, with round punctures, confluent and deeper on the declivity, interstices flat, with transverse wrinkles, especially at base, and an irregular series of very fine punctures, convex and narrowed towards apex, with but microscopic traces of any hairs. Underside black, not closely punctured, thinly hairy. Legs black; knees and tarsi reddish.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

A very well-marked little species, represented by four specimens in our collection. They show no sexual differences.

Group **HYLESINIDES.**

This group, in addition to novelties, comprises the Central-American genera of Chapuis's subtribes Phlœotrypidæ, Hylesinidæ, and Phlœotribidæ, with the exclusion of the Bothrosterni and *Pycnarthrum* (*Nemobius*, Chap.), and the addition of a genus of doubtful affinities, *Problechilus*, described as a Tomicid by Eichhoff. The group is here left as a whole, as no system of dividing it into subgroups has as yet proved capable of satisfactory definition without leaving out of account genera which are not yet known from our region. It may, however, be said that the genus *Phlœoborus* (and *Phlœotrypes*) appears to be nearly allied to *Hylesinus*, and not separable by characters of more than generic importance; that *Eulytocerus*, *Phlœotribus*, and some outside genera (*Phlœophthorus*, *Dryotomus*, *Aricerus*) form a close association, and that *Problechilus* stands apart, though presenting certain points of affinity with the latter association.

Twelve genera are indicated from Central America.

Antennal club compact.
  Funiculus seven-jointed.
    Anterior coxæ contiguous; club not compressed . . . . . *Hylastes.*
    Anterior coxæ not contiguous.
      Third tarsal joint bilobed.
        Club long, acuminate, not much compressed.
          Species very large; abdominal segments 1–4 subequal . . . . . *Phlœoborus.*
          Species moderate or small; abdominal segments 1, 2 longer than 3, 4 . *Hylesinus.*
        Club short, blunt at apex, compressed . . . . . *Dendrosinus.*
      Third tarsal joint quite simple; club compressed, oval, with oblique sutures. *Problechilus.*

Funiculus six-jointed; club compressed, oval; eyes bipartite . . . . . *Phrixosoma.*
Funiculus five-jointed.
  Anterior coxæ contiguous; club compressed . . . . . *Dendroctonus.*
  Anterior coxæ not contiguous.
    Club articulate.
      Club small, not compressed . . . . . *Xylechinus.*
      Club large, compressed . . . . . *Phlœosinus.*
      Club solid, compressed, flattened, articulated by the upper margin beyond the basal extremity . . . . . *Chramesus.*
Antennal club loosely articulate.
    Basal joint of the club trigonate, as long as broad . . . . . *Eulytocerus.*
    Basal joint of the club strongly transverse . . . . . *Phlœotribus.*

HYLASTES.

Hylastes, Erichson, Wiegm. Archiv, 1836, 1, p. 47; Chapuis, Syn. Scol. p. 16 (Mém. Soc. Liége, 1873, p. 224); Leconte, Trans. Am. Ent. Soc. i. p. 174 (1868).
Hylastes and *Hylurgops*, Leconte, Rhynch. N. Am. pp. 388, 389.

This well-known genus, numerously represented in North America, is limited in extent in Central America by the distribution of the coniferous trees on which its members feed. Six species represent it at present, the examples of which were taken chiefly in Mexico, but also in Guatemala; one, however, has occurred in Panama. The name *Hylastes*, in general use since the days of Erichson, has been recently changed by some writers to that of *Tomicus*, Latreille, who is stated to have applied that name first to this genus and a few years later to the insects generally known as *Tomicus*, but which have been lately referred to *Ips*.

In his 'Bestimmungstabellen der Borkenkäfer aus Europa, u. s. w.,' Herr Reitter has removed *Hylastes* from the Hylesinides to associate it with *Crypturgus* and *Thamnurgus*. As neither of these genera occurs in our region, it is unnecessary at present to examine into the merits of this novel grouping, which appears, at least as regards *Thamnurgus*, to be based on superficial resemblance rather than upon any valid structural affinity.

Division I.—Species with the third tarsal joint narrow and cordate, the mesosternum not prominent. (*Hylastes*, s. str.)

1. **Hylastes longipennis,** sp. n.

Linearis, niger, rostro carinato, prothorace subangusto, antrorsum attenuato, sat fortiter umbilicato-punctato, punctis inæqualibus, linea media lævi subelevata; elytris striato-punctatis, interstitiis parum convexis, multipunctatis, tenuiter rugulosis, in declivitate granulatis et seriato-setosis.

Long. 4·5 millim.

About the size of, but more slender than, *H. ater*, Payk. Black, the elytra sometimes piceous, with very short scanty yellowish pubescence. Head closely but not strongly punctate; rostrum carinate at apex, some-

what tumid towards the base, which is marked off by a slight arcuate impression. Prothorax elongate, the sides straight and subdivergent from the base to the middle, thence narrowed to the apex and little rounded; surface with close, strong, variolose punctures, intermingled with finer punctures; the median line smooth, subelevated, and abbreviated in front. Elytra markedly wider than the prothorax and twice, or more than twice, as long, with shallow striæ, the punctures rounded, not very deep; inner interstices feebly convex, the outer flat, all multipunctate, rather obsoletely rugulose, granulate towards the apex, and set with distinct uniseriate pale setæ.

Hab. Mexico (*Truqui, in coll. Fry*).

Five examples. This species cannot be identified with any given in Leconte's 'Rhynchophora of America north of Mexico,' of most of which I possess examples.

2. Hylastes vastans.

Hylastes vastans, Chap. Syn. Scol. p. 17 (Mém. Soc. Liége, 1873, p. 225) [1].

Hab. Mexico [1], Ventanas in Durango (*Forrer*), Chilpancingo in Guerrero (*H. H. Smith*); Guatemala, Quiché Mts. (*Champion*).

This species, of which we have received five examples, differs from *H. longipennis* in its slightly smaller size. The rostrum is less prominent and less impressed at the base; the prothorax is more equably rounded at the sides and is a little broader; the punctuation is deep, not variolose, uniform and less close; the elytra are relatively shorter and not so wide at the base in proportion to the prothorax; the interstices are more rugulose, and the punctures consequently less evident; at the apex the setæ are very minute and not readily distinguishable.

It is allied to a *Hylastes* from the United States standing in my collection as *H. gracilis*, Leconte, and corresponding with his description (Trans. Am. Ent. Soc. 1868, p. 174), but it differs in being black instead of piceous-brown, and in having the punctures of the elytra stronger and the interstitial rugæ more distinctly elevated.

Division II.—Species with the third tarsal joint widely bilobed, the mesosternum prominent. (*Hylurgops*, Leconte.)

1.	Interstices not alternate towards the apex of the elytra	2.
	Alternate interstices elevated and tuberculate towards apex	*subcostulatus*, Mann.
2.	Elytra black, thinly pubescent towards apex	3.
	Elytra mottled with light scales	*variegatus*, sp. n.
3.	Prothorax finely granulate, with very short pubescence	*planirostris*, Chap.
	Prothorax strongly punctured, with long pilosity	*incomptus*, sp. n.

3. Hylastes planirostris.

Hylastes planirostris, Chap. Syn. Scol. p. 21 (Mém. Soc. Liége, 1873, p. 229) [1].

Elongate, dull, black, the antennæ and tarsi rufescent. Front convex, granulate; the rostrum carinate in the

middle and impressed on either side. Prothorax a little broader than long, contracted in front, the sides and apex rounded; disc closely and finely granulate, with an elevated shining median line not reaching the apex, pubescence very short and inconspicuous. Elytra wider than the prothorax and twice as long, not strongly rounded at the base, their sides straight and subparallel; surface with a very short, fine, fulvous pile, denser and squamiform on the declivity, which is often covered in addition with a brownish crust, with punctured striæ, weaker at the sides towards the base and deeper posteriorly, interstices very slightly convex, flattened on the declivity, finely and closely rugose, with single series of inconspicuous tubercles behind the middle, and of setæ commencing at the basal third. Front tibiæ as strongly dilated and serrate as in the species of the preceding section.

Length 4·3–5·5 millim.

Hab. MEXICO, Pinos Altos in Chihuahua (*Buchan-Hepburn*), Ciudad in Durango, Ventanas (*Forrer*), Suapam (*Sallé*); GUATEMALA, San Joaquin in Vera Paz, Totonicapam (*Champion*).

Numerous specimens. Two examples from Vera Paz are brown and closely resemble *H. rugipennis*, Mannerheim, but have the prothoracic punctures closer and more rugose, so that the interspaces are not distinct and shining. In one the frontal carina is obsolete. These insects may possibly be distinct, but I do not observe any precise characters by which they can be separated.

4. **Hylastes incomptus,** sp. n.

Oblongus, subnitidus, niger, longe pilosus, antennis pedibusque rufescentibus; rostro carinato; prothorace latitudine longiore, supra fortiter irregulariter punctato, linea media lævi subelevata; elytris subtiliter punctato-striatis, interstitiis rugose granulatis.

Long. 5·5 millim.

Oblong, black, with long pubescence. Head closely and strongly punctured, rostrum with an arcuate impression at base, and an impression at apex on either side of the median carina. Prothorax longer than broad, its hind angles rounded, sides nearly straight to behind middle, then gradually rounded to apex; disc rather flat, with long, thin, fulvous pubescence, shining, with strong irregular unequal punctuation, median line subcarinate to near apex, shining. Elytra a little wider than the prothorax and not quite twice as long, with fine punctured striæ, nearly obsolete at the base, interstices with close asperate granules, their apical third with single rows of tubercles bearing long setæ and a pile of short decumbent hairs. Antennæ, tibiæ, and tarsi rufescent; anterior tibiæ abruptly truncate, the upper margin with two prominent teeth before the apical angle.

Hab. MEXICO, San Andrés Chalchicomula (*Sallé*), Salazar (*Höge*), Chilpancingo in Guerrero (*H. H. Smith*).

One example from each locality. This is a very distinct species, differing in the long hairs from any other *Hylastes* known to me, and in this respect approaching *Dendroctonus*.

5. **Hylastes variegatus,** p. n.

Subelongatus, opacus, breviter pilosus, niger, antennis tarsisque rufescentibus, elytris brunneis, squamis hic illinc pallidioribus vestitis; rostro subcarinato; prothorace dense granulato; elytris punctato-striatis, interstitiis subconvexis ad basin rugosis, postice uniseriatim tuberculatis et setosis.

Long. 4 millim.

Rather elongate. Head black, with mouth reddish, closely reticulate and punctured, shortly pubescent; rostrum wide, indistinctly carinate, not impressed at junction with front; antennæ reddish, with club

black, its first joint not reaching to the middle. Prothorax transverse, constricted in front, sides strongly rounded in middle; disc black, with anterior margin ferruginous, densely granulate, with short erect hairs, median line nearly obsolete. Elytra a little wider than the prothorax and twice as long, separately rounded and crenate at base, parallel-sided to hinder third; brown, covered with close short scales, which are lighter in patches, forming an irregular tessellation, punctate-striate, the punctures oval, interstices subconvex, granulate towards base, behind with single series of small tubercles and semi-erect setæ. Legs black; knees and tarsi reddish; anterior tibiæ rather strongly dilated and finely serrate.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One example. This species resembles *Hylesinus sericeus*, Mann., which has, I believe, been lately referred to *Hylurgops*. It is, however, much larger, with a less elevated median line on the prothorax, deeper elytral striæ, the interstices more strongly granulate towards the base and more conspicuously setose. Moreover, the basal joint of the antennal club is relatively larger.

6. **Hylastes subcostulatus.**

Hylastes subcostulatus, Mann. Bull. Mosc. 1853, 2, p. 239[1]; Lec. Trans. Am. Ent. Soc. i. p. 176 (1868)[2].

Hylurgops subcostulatus, Lec. Rhynch. N. Am. p. 390[3].

Hylastes alternans, Chap. Syn. Scol. p. 22 (Mém. Soc. Liége, 1873, p. 230)[4].

Hab. NORTH AMERICA, Alaska [1], Oregon and Sierra Nevada [2 3], California (*Ricksecker*). —MEXICO [4], Jacale and Suapam (*Sallé*), Omilteme in Guerrero (*H. H. Smith*).

One specimen, taken at Omilteme, in addition to three from M. Sallé's collection. The species is easily recognized by the alternate interstices of the elytra being costate and coarsely tuberculate towards the apex.

DENDROCTONUS.

Dendroctonus, Erichson, Wiegm. Archiv, 1836, 1, p. 52; Chapuis, Syn. Scol. p. 34 (Mém. Soc. Liége, 1873, p. 242); Leconte, Rhynch. N. Am. p. 384; Dietz, Trans. Am. Ent. Soc. xvii. p. 27 (1890).

Three species of this genus occur in Central America.

1. **Dendroctonus terebrans.**

Scolytus terebrans, Oliv. Ent. iv. 78, p. 6, t. 1. figg. 6, *a*, *b* [1].

Dendroctonus valens, Lec. Pacific R.R. Expl. and Surveys, Ins. 59 [2]; Chap. Syn. Scol. p. 35 (Mém. Soc. Liége, 1873, p. 243) [3].

Dendroctonus terebrans, Lec. Trans. Am. Ent. Soc. i. p. 173 (1868) [4]; Rhynch. N. Am. p. 385 [5]; (?) Chap. Syn. Scol. p. 35 (Mém. Soc. Liége, 1873, p. 243) [6]; Dietz, Trans. Am. Ent. Soc. 1890, p. 29 [7].

Hab. NORTH AMERICA [1], Canada [5] and United States [2 3 4 5 7].—MEXICO, Salazar (*Höge*), Parada (*Sallé*); GUATEMALA, Coban in Vera Paz (*Conradt*).

The Central-American examples present no important variations from the form

regarded as typical by Dietz [7]. The specimen from Texas which stands in the Chapuis collection as *D. terebrans* (Oliv.) agrees in the structure of its epistoma and the scape of the antenna, but is smaller, pitchy-black in colour, with the front impressed in the middle; the occiput shining and coarsely punctured; the prothorax scarcely bisinuate at the base, shining, and very strongly punctured; the hairs very long and conspicuous towards the apex of the elytra. Its length is 5·5 millim.

2. **Dendroctonus parallelocollis.**

Dendroctonus parallelocollis, Chap. Syn. Scol. p. 36 (Mém. Soc. Liége, 1873, p. 244) [1].

Elongate and parallel-sided, piceous-black. Median segment of epistoma equal in length to lateral segments, with oblique sides and straight anterior border; front flattened, with a median impression, posteriorly strigose; vertex shining and punctured; scape of antenna rather strongly clubbed, with rounded angles. Prothorax slightly narrowed anteriorly, the sides scarcely sinuate, the apical emargination shallow; surface shining, rather strongly and not closely punctured, pubescence fuscous, the median line impressed. Elytra parallel-sided, narrow, strongly rounded and crenate at base, rather coarsely asperate, the asperities forming well-marked transverse ridges at the base, finer on the declivity; striæ shallow, not conspicuously punctured, pubescence fuscous, thin, long on the declivity only. Legs piceous.

Length 6·3 millim.

Hab. Mexico [1].

I have seen no other example than the type, which has unfortunately lost the club of both antennæ. The species is distinct from any described from North America. From *D. approximatus*, Dietz, which it most nearly resembles, it differs in its smaller size, more elongate shape, more shining and strongly-punctured prothorax, and indistinct elytral striæ.

3. **Dendroctonus adjunctus,** sp. n.

Oblongus, subdepressus, nigro-piceus, fusco-pilosus, subnitidus, fronte strigose impressa; prothorace antice constricto, parcius punctato, linea media obsoleta; elytris posterius dilutioribus, striato-punctatis, interstitiis granulatis, in declivitate subrugosis et uniseriatim pilosis.

Long. 4·6–5·3 millim.

Oblong, less elongate than *D. parallelocollis*, slightly depressed, piceous-black with apex of elytra lighter. Median segment of epistoma shorter than the lateral segments, its sides very oblique and elevated, its apical border concave; front covered with close granules and punctures, with an interrupted median impressed line deepest at its junction with a slight transverse subocular impression; vertex finely punctured; antennæ piceous, the scape with rounded club, 2nd joint of funiculus scarcely longer than 1st, club transverse oval, its sutures curved towards apex. Prothorax more transverse than in *D. parallelocollis*, constricted in front, the apical emargination and basal bisinuation distinct; surface impressed behind apex and somewhat flattened, shining, the punctures sparse and not strong, the median line obsolete. Elytra feebly striato-punctate, shining, except at the closely granulate base, with somewhat scattered granules, obsolete on the declivity, interstices with rows of distinct long dark hairs from middle to apex, the first with a single series of stronger granules. Legs piceous.

Hab. Guatemala, Totonicapam (*Champion*).

A distinct species, resembling a *Myelophilus* rather than a *Dendroctonus*. But two specimens were taken.

PHRIXOSOMA, gen. nov.

Caput vix rostratum. Oculi bipartiti. Antennæ lateraliter insertæ, funiculo 6-articulo, articulis 2°–6 latitudine crescentibus, clava haud magna, ovali, compressa, pubescente, suturis tribus leniter curvatis instructa. Tibiæ versus apicem dilatatæ, margine superiore in lobum serratum explanato; tarsi breves, articulo 3° angusto, simplici.

Head very shortly rostellate; eyes bipartite, the divisions small, flat, rather widely separated, not united by a carina or fold, the superior semicircular, the inferior larger, semielliptical, their contiguous borders straight; antennæ laterally inserted at the apex of a deep groove passing along the buccal margin to meet its fellow on the gula, with a short six-jointed funiculus, the basal joint globose, the succeeding joints transverse, widened towards the club, which is rather small, oval, flattened, pubescent, with three indistinct slightly curved sutures, the upper half of the basal suture alone being thickened and well-marked. Prothorax semielliptic, not bordered laterally. Scutellum not depressed. Elytra separately rounded, elevated and crenate at the base. Prosternum short before the nearly approximate anterior coxæ. First abdominal segment as long as the second and third together. Tibiæ widened apically, with the upper margin dilated towards the apex into a rounded serrate lobe. Tarsi not long, the three first joints short, subequal, the third narrow, emarginate at apex.

In the shape of the body, and in the bipartite eyes and simple tarsi, the single species appears to show affinities with the rather isolated genus *Polygraphus*. But it differs in possessing a six-jointed funiculus and a club traversed by sutures, which are, however, indistinct. Moreover the sculpture and vestiture do not conform with that found in *Polygraphus*, of which the species are extremely uniform in these respects.

1. **Phrixosoma rude,** sp. n. (Tab. VI. figg. 12; 12 *a*, antenna; 12 *b*, middle leg; 12 *c*, hi d leg.)

Oblongum, subnitidum, breviter pilosum, nigrum vel piceo-nigrum, antennis et pedibus ferrugineis; prothorace paullo latiore quam longiore, antice constricto, lateribus postice parallelis, supra dense asperate punctato, linea media elevata lævi; elytris striatis, interstitiis asperatis breviter setosis.

Long. 2·4 millim.

Oblong, black or piceous-black, with the anterior margin of the prothorax and elytra a little lighter, covered with short suberect hairs. Head convex, closely granulate; rostrum short and wide, indistinctly carinate over mouth. Prothorax a little broader than long, narrowed anteriorly, parallel-sided for the posterior third, the apical margin obtuse; surface slightly shining, with close asperate punctuation, rather sparser along the median elevated line. Scutellum triangular, rugose. Elytra as wide as the prothorax and rather less than twice as long, their basal margins slightly elevated, crenate, and closely applied to the prothorax, the sides parallel to the middle, thence obliquely rounded to the apex; surface with narrow deep striæ, not evidently punctured, interstices flat, closely asperate, with short, erect, non-seriate setæ. Legs dark ferruginous.

Hab. Panama, Volcan de Chiriqui (*Champion*).

Three examples, without sexual distinctions. This species is curiously like *Phlœotribus discrepans*, differing of course in the structure of the antennal club.

PHLŒOBORUS.

Phlœoborus, Erichson, Wiegm. Archiv, 1836, 1, p. 54; Lacordaire, Gen. Col. vii. p. 372; Chapuis, Syn. Scol. p. 12 (Mém. Soc. Liége, 1873, p. 220).

This and the allied genus *Phlœotrupes* have been placed by Lacordaire in a separate

subfamily on account of the coarse granulation of the eyes, a feature, however, which is not more marked than is to be expected from the large stature of the species. As Eichhoff has pointed out, there is no sufficient reason for separating them from the Hylesinides.

These genera are both Neotropical, but *Phlœotrupes* has not yet been found in Central America. It is distinguished by the rounded, compressed, and obtuse antennal club, the deep excavation of the inner face of the tibiæ, and the elongate apical joint of the maxillary palpus, which is equal in length to both the basal joints.

In *Phlœoborus* the club is acuminate and scarcely compressed, the tibiæ are less excavate internally, and the apical joint of the maxillary palpi is shorter than either of the basal joints.

A feature noticeable in certain specimens of *Phlœoborus* is the existence on the propleura, above and before the anterior coxæ, of a deep circular fovea, lined with hairs, and containing, at least in some dried examples, a fatty secretion (Tab. VI. fig. 13 *b*). It appears to be the structure indicated by Chapuis under the name "depressio sternalis," and is not mentioned by Erichson or Lacordaire. The question naturally arises whether it be a sexual character or not, and it is one which has not been easy to decide in practice; for although dissection affords a means of correctly determining the sex of each of two forms which are known to be male and female of the same species, it can furnish only presumptive evidence of the specific identity of two forms of opposite sex, and that merely if a large number of each form is examined and the sexual organs are found to be constantly male or female. At the time that Chapuis's series of *Phlœoborus* was before me there was no evidence in favour of this character being sexual; all specimens of *P. rudis* examined, some twenty in number, possessed the foveæ, no typical examples of *P. sericeus* did so. But in Mr. Fry's collection, as related further under *P. scaber*, are specimens which differ only in the presence or absence of this organ; and on revising the accessible material, I have been led to infer that it is really a sexual feature, characterizing the female, at least in the latter species. Whether it is ever present in the male, or absent in both sexes, remains to be proved; reasoning by analogy alone, both these things may occur.

The limits of the species are difficult to ascertain, as the rugæ or tubercles which make up the thoracic and elytral sculpture are extremely variable in degree of development; their number and situation on the elytra, and their differences in kind rather than in degree of development, appear to be more reliable characters.

It may be added that the forms furnished with propleural foveæ possess a wider and more convex front, and their rostrum is less or not impressed over the mouth; this is in agreement with the presumption that they are females.

The range of the genus extends from Mexico to Brazil; it has not been found in the Antilles. I have seen six forms from Central America which I regard at present as distinct species; but two may prove eventually to be sexes of the same species.

The following table, which includes all species of the genus that I have recognized, is necessary to supplement Chapuis's very curt and non-differential diagnoses; but it was drawn up in the belief that the foveæ were of specific value, and cannot now be revised. Nevertheless it may prove useful as a key to his descriptions, if only it be recollected that in several cases he has probably described the sexes of the same species under distinct names.

1.	Eyes contiguous on front	2.
	Eyes remote on front	9.
2.	Propleura foveolate	3.
	Propleura not foveolate	7.
3.	Elytral striæ strong, subsulcate; interstices rugose to the apex	4.
	Elytral striæ fine, incised; interstices smooth at apex with small elevated tubercles	6.
4.	Rugæ of elytral interstices coarse, irregular, not close, usually separated by a space greater than the width of the interstice	[*grossus*, Chap.]
	Rugæ less coarse, regularly and closely placed	5.
5.	Punctures of prothoracic disc neither muricate nor confluent; 2nd interstice of elytra tuberculate to the apex	*rudis*, Er.
	Punctures of prothoracic disc submuricate or confluent; 2nd interstice depressed at and not tuberculate to the apex	*belti*, sp. n.
6.	Elevations on the sutural interstice uniseriate, at least before the declivity	[*radulosus*, sp. n.]
	Elevations on the sutural interstice irregularly biseriate	♀, *scaber*, Er.
7.	Elytra subnitid, but closely asperate; base of prothorax shining, with large impressed punctures	[*elongatus*, Chap.]
	Elytra dull, sericeous, with isolated elevated rugæ; base of prothorax dull and rough	8.
8.	Elevations on basal third of the elytra consisting of rounded points	[*cristatus*, Chap.]
	Elevations on basal third of the elytra transverse	♂, *scaber*, Er.
9.	Interocular space nearly flat	10. Chap.*]
	Interocular space excavate	[*asper*, Er., and *ovatus*,
10.	Propleura foveolate	11.
	Propleura not foveolate	13.
11.	Prothorax muricate at the anterior angles	*rugatus*, sp. n.
	Prothorax not muricate	12.
12.	Median line of prothorax subimpressed; elytral interspaces subnitid (length over 9 mm.)	[*ellipticus*, Chap.]
	Median line of prothorax not impressed; elytral interspaces dull (length under 8 mm.)	*nitidicollis*, Chap.

* *P. ovatus*, Chap., appears to be no more than a diminutive variety of *P. asper*, Er.

13.	Prothorax with no transverse elevation; its punctuation simple towards the base	14.
	Prothorax with a transverse subelevated line, its punctuation submuricate towards the base	*punctato-rugosus*, Chap.
14.	Elytral elevations tubercular, papilliform	[*mamillatus*, Chap.]
	Elytral elevations consisting of transverse rugæ	[*breviusculus*, Chap.]

1. **Phlœoborus rudis.** (Tab. VI. figg. 13; 13 *a*, front; 13 *b*, prothorax with fovea.)

Phlœoborus rudis, Er. Wiegm. Archiv, 1836, 1, p. 55 [1]; Chap. Syn. Scol. p. 12 (Mém. Soc. Liége, 1873, p. 220) [2].

Black or piceous, subcylindrical. Eyes contiguous above, infraocular space subtriangular, subimpressed and rugosely punctured, with a median carina, shortly pubescent; vertex punctured. Prothorax strongly transverse, subrugose, with strong variolose punctures, confluent at sides, but without trace of asperate projections, median line variable, subelevated, smooth, a smooth patch, sometimes impressed, on each side of it, interspaces shining, not sculptured. Elytra two and a half times as long as the prothorax, subnitid, rather strongly rounded at base, parallel-sided; striæ rather shallow, their punctures large but indistinct; interstices from base to extreme apex with close raised transverse rugæ uniseriate behind the middle, their interspaces short, irregular, impressed. Prothoracic foveæ large and deep. Legs deep piceous, the tibiæ sulcate internally, less strongly than in *Phlœotrupes*.
Length 11–13 millim.

Hab. British Honduras, River Sarstoon (*Blancaneaux*); Nicaragua, Chontales (*Belt, Janson*).—Guiana, Cayenne [2]; Brazil [1 2].

Three examples only of this well-marked species, one of the most common in collections, in which it frequently does duty for *Phlœotrupes*, Er., have reached us from Central America. Mr. Champion, by whom the large majority of the Scolytidæ have been collected, did not meet with it in Guatemala or Panama. The twenty specimens I have examined all possess the propleural foveæ; should this character be found to occur in one sex only of this species, it is likely that *P. elongatus*, Chap., will prove to be the other sex. Of this latter, examples are not available at the time of writing.

2. **Phlœoborus belti,** sp. n.

Oblongo-ovalis, subopacus, nigro-piceus; oculis contiguis; prothorace transverso, pleuris foveolatis, supra ad latera et versus apicem muricato, posterius punctis rugosis confluentibus irregulariter notato; elytris punctato-striatis, interstitiis rugis transversis sat dense asperatis, 2° ad apicem subimpresso nec rugoso.
Long. 8 millim.

Oblong-oval, deep piceous. Front below the approximate eyes rugose and indistinctly carinate; antennal club short-oval, slightly flattened. Prothorax transverse, widest before base, apex obtuse, forming a rounded angle with the sides; apical half and sides muricate, basal half with confluent punctures, separated by irregular rough elevations, median line subelevated, lateral impressions not distinct. Scutellum rounded. Elytra wider than the prothorax at base and more than twice as long, their basal margins rounded, the shoulders not prominent, sides subparallel; with distinctly punctured striæ, interstices with transverse rugæ, not as close as in *P. rudis*, uniseriate behind the middle, except on the 3rd and 5th interstices, on them not before the declivity, apex of the 2nd subimpressed, without elevations, finely reticulate. Tibiæ more slender and less deeply sulcate than in *P. rudis*.

Hab. NICARAGUA, Chontales (*Belt*).

This new species is represented by a single specimen only. The structure of its antennal club approximates to that of *Phlœotrupes*, which the species does not resemble in other structural points. It cannot yet be associated as the opposite sex with any other described form.

3. **Phlœoborus scaber.**

Phlœoborus scaber, Er. Wiegm. Archiv, 1836, 1, p. 55 [1].

♂. *Phlœoborus sericeus*, Chap. Syn. Scol. p. 13 (Mém. Soc. Liége, 1873, p. 221) [2].

Oblong-oval, obscure piceous or piceous black, subopaque with a dull sericeous gloss, due to a fine close shagreening of the interspaces between the rugæ of the thorax and elytra. Eyes approximate above and below; front above the eyes simply punctate, below, together with rostrum, with close variolose confluent punctuation; rostrum (♂) narrower, broadly but not deeply impressed, carinate in the middle, and margined with an elevated ridge before the antennal fossa; rostrum (♀) broader, flattened but scarcely impressed, carinate, but without the lateral ridges. Prothorax transverse, widest shortly before the base, the sides rounded, the anterior angles muricate and therefore evident in the females, and sometimes in well-developed males; surface rather densely asperate, the asperities conjoined in irregular lines, and sometimes obsolete at the base, which may be marked with large umbilicate punctures, usually confluent along the hind margin, median line variable, usually well-marked and subelevated behind, especially in the female, not always reaching the apex in front, disc between the median line and the middle of the sides with a smooth, sometimes foveolate, patch; flanks foveolate in the female. Scutellum oblong-ovate, variable, sometimes impressed. Elytra subparallel-sided, with fine impressed punctured striæ; interstices nearly flat, dull, with numerous isolated rugæ, transverse and irregularly biseriate to beyond the middle (in the male, sometimes uniseriate on the 4th interstice), then becoming uniseriate, tuberculiform, and obsolescent at the apex of at least the two inner interstices; the tubercles and rugæ bearing single very short setæ, hardly distinguishable in the female.

Length, ♂, 6–8 millim.; ♀, 8–9·2 millim.

Hab. MEXICO, Orizaba (*Sallé*), Cordova (*Sallé, Höge*); GUATEMALA, Pantaleon (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—COLOMBIA [2]; GUIANA, Cayenne [2]; BRAZIL [1 2].

Perhaps the commonest species of the genus. We have received twenty specimens from Central America, of which one alone possesses the propleural foveæ. Assuming this to be a sexual character, the form which lacks the foveæ is the male, as has been ascertained by dissection. As the female specimen in question has some other differences from the corresponding males taken at Bugaba—greater gloss, stronger sculpture, the asperities traceable to the apex of the elytra,—I regarded it at first as a distinct species; and it was not until long after my original examination of the genus that the discovery in Mr. Fry's collection of examples from Santa Catherina, which were absolutely alike save in the presence or absence of the foveæ, made it manifest that this was in all likelihood a sexual distinction. The male (*P. sericeus*, Chap.) is the commoner sex and is rather more uniform in sculpture than the female; my example of *P. scaber*, named after comparison with the specimens in Chapuis's collection, is simply a

female in which the elytral rugæ are very weak throughout and obsolete behind for a greater distance from the apex *.

4. **Phlœoborus rugatus,** sp. n. (Tab. VI. fig. 14.)

Subovatus, subnitidus, ater; oculis discretis, angustis; prothorace valde transverso, lateraliter foveolato, angulis anticis prominulis muricatis, disco punctato, punctis ad latera modo subasperatis; elytris lateraliter rotundatis, striatis, interstitiis subconvexis rugis elevatis transversis in declivitate obsolescentibus instructis.

Long. 9 millim.

Black, subnitid. Front subconvex, punctured, weakly carinate, the mouth fringed; antennal club acuminate, subcompressed. Prothorax nearly twice as long as broad, its hind angles rounded, the sides slightly curved and narrowed from the base to the anterior angles, which are prominent and muricate, anterior border bisinuate; surface declivous in front, shining, with rather scattered punctures, becoming asperate at the sides, with a median smooth striga impressed along the middle, and a depression on either side behind and within the anterior angles; flanks foveolate. Scutellum subquadrangular, impressed behind. Elytra narrower at base than the prothorax and more than twice as long, their basal margins oblique but not rounded, deeply excised in middle for the scutellum, humeral angles broadly, the sides subelliptically rounded; striæ fine, incised, the interstices subconvex behind the middle, with close transverse elevations, smaller and shorter on the abrupt declivity and obsolete at the apex. Legs black, the hinder tibiæ rather strongly impressed internally.

Hab. NICARAGUA, Chontales (*Belt; Bird, in Mus. Oxon.*).

A distinct species, represented by a solitary example in each collection. The species has the facies of a *Phlœotrupes* rather than of a *Phlœoborus*; but the apical joint of the maxillary palpi is short, the anterior tibiæ are not excavate internally, and the antennal club, though slightly compressed, is strongly acuminate.

5. **Phlœoborus nitidicollis.** (Tab. VI. figg. 15; 15 *a*, front.)

Phlœoborus nitidicollis, Chap. Syn. Scol. p. 14 (Mém. Soc. Liége, 1873, p. 222) [1].

Oblong-oval, black. Front subconvex, shining, impressed on either side above the mouth and subcarinate in

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* The following species is very closely allied to *P. scaber*, but appears to be distinct from it:—

Phlœoborus radulosus, sp. n.

Fem. Oblonga, nigro-picea, propleuris foveolatis; *P. scabro* ♀ major, prothoracis angulis anticis tuberculis discretis haud muricatis; elytrorum striis parum impressis, punctis inde præcipue versus apicem discretis, rugis fortioribus minus confertis, ante medium minus transversis, in interstitio suturali raris, præcipue versus basin, et fere uniseriatim ordinatis.

Long. 10–11 millim.

Hab. ECUADOR (*coll. Blandford*); VENEZUELA (*coll. Fry et coll. Schaufuss*).

The prothorax in my example has two foveolate impressions on either side of the disc; in one belonging to Herr Schaufuss the median line is absent.

The scanty uniseriate rugæ of the sutural interstice appear to distinguish this species from *P. scaber*, all the females of which, that I have seen, have these rugæ very close and numerous even when weakly developed. *P. radulosus* is also rather more shining.

the middle; vertex subopaque. Prothorax transverse, with the sides slightly rounded to anterior third, then broadly and uniformly rounded with the apex; surface convex, very shining, with regular fine sparse punctuation, median smooth line indistinct, not elevated; flanks foveolate. Scutellum transverse, impressed. Elytra subelliptic, obtusely rounded behind; with punctured striæ, interstices dull, subsericeous, multipunctate, with transverse elevations, small and close at base, uniseriate and more remote about middle, obsolete towards apex, especially on the second interstice.

Length 7–8·5 millim.

Hab. NICARAGUA, Chontales (*Janson*).—BRAZIL, Rio Janeiro [1], New Friburg [1].

This species is quite easily distinguished, by the smooth shining prothorax, foveolate flanks, and remote eyes, from any other at present known.

6. **Phlœoborus punctato-rugosus.**

Phlœoborus punctato-rugosus, Chap. Syn. Scol. p. 14 (Mém. Soc. Liége, 1873, p. 222) [1].

Oblong-ovate, pitchy-black, with a slight gloss. Front impressed and carinate over the mouth, subconvex and granulate between the eyes. Prothorax transverse, strongly constricted in front, the sides scarcely rounded behind, the anterior margin bisinuate; anterior portion rather finely asperate and declivous, its junction with the posterior part marked by a transverse subelevated line, the latter half with subasperate punctures. Elytra twice as long as the prothorax, dull, with punctured striæ, the interstices with transverse elevations, not very close at the base, sparser behind, and absent over the declivity, their interspaces with fine irregular punctures, becoming uniseriate at the apex of the 2nd and succeeding alternate interstices.

Length 7–8 millim.

Hab. MEXICO, San Andres Tuxtla (*Sallé*); NICARAGUA, Chontales (*Janson*).—COLOMBIA [1].

Like other species of *Phlœoborus* this one varies in the number and closeness of the interstitial elevations. It differs from *P. nitidicollis* in the absence of propleural foveæ, in the submuricate prothorax, and in the few and sparse rugæ on the basal half of the elytral interstices; but it may nevertheless prove to be the male of that species.

7. **Phlœoborus imbricornis.**

Phlœoborus imbricornis, Eichh. Berl. ent. Zeitschr. 1868, p. 148 [1].

Hab. MEXICO (*coll. Haag* [1]).

I have seen neither the type of this species nor any specimens which correspond with the brief description.

HYLESINUS.

Hylesinus, Fabricius, Syst. Eleuth. ii. p. 390; Chapuis, Syn. Scol. p. 29 (Mém. Soc. Liége, 1873, p. 237).

This genus is of wide distribution, extending throughout Europe, Asia, the Malay Archipelago, Australia, and North and South America. Judging from the limited

number of American species described, it appears to be less well reeresented in that continent than in the Palæarctic region. There is only just sufficient evidence to warrant its inclusion in the list of Central-American genera.

1. **Hylesinus,** sp.

Hab. Mexico, Yucatan (*coll. Chapuis*).

The specimen referred to stands in Chapuis's collection under the MS. name of *H. puellus*. It is quite distinct from any known North-American species, and many of its characteristics of colour and sculpture can be well recognized. But it is proposed to follow Chapuis's example in leaving it undescribed, as the insect has been much injured and crushed and certainly is not fit for the type of a species *.

DENDROSINUS.

Dendrosinus, Chapuis, Syn. Scol. p. 28 (Mém. Soc. Liége, 1873, p. 236).

This genus is distinguished from *Hylesinus* by the antennal club, which is flattened, orbicular or oblong, with the apex obtusely rounded or truncate. It is marked towards the base with three pilose sutures; the basal joints are very short, transverse, and shining, the fourth joint forms the apical two-thirds of the club and is entirely pubescent. Head not rostrate, large; funiculus short, 7-jointed, the joints scarcely increasing in size; eyes elongate oblong. Prothorax not margined at the sides, strongly produced backwards between the bases of the elytra, which are rounded and elevated. Scutellum not depressed. Prosternum with a wide transverse process between the anterior coxæ. Mesosternum vertical, hidden. Metasternum very short. Abdominal segments nearly equal in length, the apical margin of the third produced at the lateral angles; intercoxal process wide and rounded at apex. Anterior and middle pairs of coxæ widely separated. Tibiæ broadly dilated and truncate at apex, their upper margin with two or three spines. Tarsi short, the 3rd joint bilobed.

The genus shows some affinity with *Sphærotrypes*, Blandf., from India and Japan, but is without the bipartite eyes and prothoracic side-margin of the latter. The species appear to be few in number and are extremely alike in appearance. Those, however, which I have seen present on close examination well-marked points of difference, and as the species can be briefly diagnosed I describe those known to me. It should be added that the specimens before me do not show any external sexual characters.

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* There are two specimens of a *Hylesinus* labelled "Mexico" in my collection, from that of A. Deyrolle, which I cannot distinguish in any way from *H. fraxini*, Panz., var. *varius*, Fabr. As the latter species is not yet known to occur in North America, further confirmation is required of its existence in Mexico.

1. Antennal club broader than long, oblate orbicular . . . . . *transversalis*, sp. n.
   Antennal club longer than broad, subtruncate oval . . . . . 2.
2. Elytral hairs fulvous . . . . . [*globosus*, Eichh.]
   Elytral hairs black . . . . . 3.
3. Prothorax quite opaque, with very shallow close rugose punctuation . . [*vittifrons*, sp. n.]
   Prothorax with deep, not confluent, punctures, the interspaces shining . [*puncticollis*, sp. n.]

1. **Dendrosinus transversalis**, sp. n. (Tab. VI. figg. 16; 16 *a*, antenna.)

Convexus, ovatus, niger, opacus, fronte dense breviter aureo-villosa, antennarum clava transversali, oculis integris; prothorace valde transverso, rudi; elytris striatis, interstitiis fuliginoso-setosis.

Long. 4·3 millim.

Convex, ovate, black, dull. Front flattened, with dense short upstanding aureous pubescence and no median smooth line; antennæ ferrugino-testaceous, the club large, broader than long, strongly rounded laterally and truncate at the apex, the sutures curved, the third bisinuate. Prothorax strongly transverse, rounded at the sides and subconstricted towards the apex, its anterior margin somewhat obtuse, the base bisinuate, very oblique on either side and produced backwards between the elytra; surface convex, opaque, with short pale pubescence, and close very shallow confluent punctuation, the median line indistinctly elevated at the base only. Scutellum small, convex, rugose. Elytra wider than the prothorax, their basal margins oblique, sinuate, elevated and crenate, the apices separately rounded; surface with indistinctly punctured incised striæ, the interstices wide, flat, finely granulate, more strongly towards the base, set with very short decumbent hairs; fuliginous-black or fuscous, lighter at the base and sides. Abdomen convex, subnitid, weakly punctured, with short yellowish pubescence. Legs piceous, the tarsi lighter.

Hab. Mexico, San Andres Tuxtla (*Sallé*).

Two examples. The large entire eyes and transverse antennal club are important distinguishing features *.

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* The remaining differential characters of the other species are as follows:—

Dendrosinus globosus, Eichh.

Ovalis, convexus, sublongior; fronte parcius pallide villosa, linea media indistincta; antennarum clava ferruginea, oblonga, suturis vix curvatis; oculis haud permagnis, antice sinuatis, prothoracis linea media distinctius elevata; elytrorum setis fulvis.

Long. 4·3 millim.

Hab. Venezuela (*Moritz, in Mus. Vind. Cæs.*).

This species was described from "America borealis," but has not yet been recognized in the United States. I have been able to see the type, now in Herr Schaufuss's collection.

Dendrosinus vittifrons, sp. n.

Late ovatus; fronte pube brevi velutina, vitta media subelevata rudi excepta, ornata; oculis antice emarginatis; antennis piceis, clava oblonga, sutura 3ª sinuata; prothoracis linea media per totum distincte subelevata, pube fusca; elytrorum margine basali fortius crenato, interstitiis ad basin magis granulatis, postice minus dense pilosis et opacissime subsericeis, setis omnibus nigris.

Long. 4–4·6 millim.

Hab. Brazil (*in Mus. Oxon., et in coll. Blandford*).

Dendrosinus puncticollis, sp. n.

Minor, fronte subglabra, rudi, supra os modo rugose punctata, et linea media abbreviata notata; oculis antice

XYLECHINUS.

Xylechinus, Chapuis, Syn. Scol. p. 36 (Mém. Soc. Liége, 1873, p. 244).

The structural characters of the five Central-American species here included in the genus are as follows:—Eyes oblong, entire. Antennæ inserted laterally at the apex of a furrow which extends more or less on to the gular region, with 5-jointed funiculus, the joints 2–5 not greatly increasing in size. Club acuminate oval, not compressed, thinly pubescent, with transverse pilose sutures, 4-jointed, joints 1–3 subequal, 4th shorter. Scutellum scarcely depressed. Elytra separately rounded at the base. Prosternum excised in front to the coxæ, which are separated by a subquadrate process. First abdominal segment as long as the two following. Tibiæ dilated towards the truncate apex, their superior border dentate. Tarsi short, the first three joints equal, somewhat flattened, the third emarginate.

In the larger forms the head is rostrate, the prothoracic epipleura form an angle with the dorsum but are not margined, and the teeth of the tibiæ are long and conspicuous. In the smaller forms the head is shorter, the prothorax is more nearly cylindrical, and the tibial spines are inconspicuous. The larger species present but little resemblance to the European *Xylechinus pilosus*, Ratz., and the coincidence of their generic characters may be no real indication of close relationship.

1. Anterior tibiæ strongly spined: length 3 millim. or over . . . . . 2.
   Anterior tibiæ not strongly spined: length under 2·5 millim. . . . . 3.
2. Elytral setæ long; 2nd interstice not depressed at apex . . . . . *irrasus*, sp. n.
   Elytral setæ not long; 2nd interstice depressed at apex . . . . . *scabiosus*, sp. n.
3. Elytral interstices convex . . . . . *fuliginosus*, sp. n.
   Elytral interstices flat . . . . . 4.
4. Head distinctly subrostrate: length over 2 millim. . . . . *tessellatus*, sp. n.
   Head not distinctly subrostrate: length under 2 millim. . . . . *marmoratus*, sp. n.

1. **Xylechinus irrasus**, sp. n. (Tab. VI. figg. 17, ♂; 18, head and prothorax, ♀.)

Oblongus, piceo-ferrugineus, pilis subsquamatis variegatis vestitus; rostro carinato; prothorace transverso, lateraliter rotundato, supra subtiliter punctato, linea media carinata abbreviata; elytris punctato-striatis, interstitiis subconvexis, setis longis erectis uniseriatim ornatis, 2^do^ in declivitate haud impresso.

Mas. Rostro impresso, lateraliter marginato, fronte densius pilosa; prothorace lateraliter ampliore, ad apicem magis constricto.

Long. 3·5 millim.

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subemarginatis; antennis testaceis, clava oblonga, suturis sinuatis; prothorace fortiter conferte punctato, interstitiis nitidis, linea media haud distincta; elytris nigro-setosis.

Long. 3·5 millim.

Hab. Colombia (*Wagner, in coll. Schaufuss*).

The variety referred to by Chapuis (Syn. Scol. p. 28) is not before me as I write; from notes made when I saw it, it is probably *D. vittifrons*. Most examples of the genus show a few shining granules on the sides of the prothorax before the middle; they are scarcely evident in *D. transversalis* and are most conspicuous in *D. vittifrons*.

Oblong, piceous-red, covered with decumbent subsquamous hairs, cinereous-yellow, variegated with brown patches. Head oblong, blackish with mouth reddish; rostrum well-developed, carinate, impressed and shining (♂) with the side-margins elevated and the frontal pubescence denser, wider and less impressed (♀) with the pubescence weak; antennæ ferruginous with darker club. Prothorax transverse, constricted at apex, and widest a little behind the middle, the sides (♂) little rounded posteriorly, rather strongly about the middle and markedly constricted in front, (♀) much less strongly rounded and constricted, flanks abruptly and obliquely inflexed, but not separated by an elevated margin from the disc; above not very convex, subimpressed behind the apex, closely and finely punctured, and pubescent, with three brown vittæ towards the base of darker semi-erect curved hairs, the outer vittæ narrower and curved. Scutellum rounded, black, rugose. Elytra wider than the prothorax and twice as long, overlapping its base, their basal margins rather strongly rounded but scarcely granulate, the sides subparallel to beyond the middle and thence obliquely rounded; red-brown with short decumbent pubescence tesselated with brown spots which form three or four irregular transverse vittæ towards the apex, punctate-striate, the punctures large and deep, the striæ not strongly impressed, the interstices slightly convex, with single series of rather long erect setæ. Underside black, pubescent; coxæ and legs reddish, the anterior pair long.

Hab. PANAMA, Volcan de Agua (*Champion*).

One pair. A somewhat singular-looking insect, certainly very unlike the European *Xylechinus pilosus*, but not separated by any clear generic characters from the following species. The form of the head and prothorax recalls that of the very aberrant genus *Hyorrhynchus*, from Japan, which is peculiar in having the tibiæ destitute of armature.

2. **Xylechinus scabiosus,** sp. n.

Oblongus, piceo-niger, dense fusco-pilosus; rostro carinato; prothorace transverso, antice constricto, dense rugose punctato, linea media indistincte carinata; elytris punctato-striatis, interstitiis convexis seriatim setosis, 1° et 3° ad apicem elevatis, 2° impresso, glabro.

Long. 3 millim.

Oblong, dull, covered with short fuscous hairs. Head black, front subconvex, finely and scantily pubescent; rostrum wide, carinate, with an arcuate impression at base and a tubercle on either side of the carina. Prothorax transverse, narrowed towards apex, sides nearly straight to middle, then somewhat abruptly flexed; lighter in middle of base and at apex, with close confluent punctuation, and a nearly effaced median carina, pubescence short, longer at sides, obscurely mottled. Scutellum small, rounded, rugose. Elytra rather wider than the prothorax and twice as long, separately rounded and crenate at base, subparallel to behind middle, thence rounded; surface pilose, with squamiform hairs, obscure brown, lighter in places, striate, the striæ with strong rounded punctures; interstices convex, tuberculate at base, each with a single series of short setæ, 1st and 3rd elevated on the rather oblique declivity, 2nd impressed and glabrous. Underside and legs black, the former scantily pubescent.

Hab. PANAMA, Volcan de Agua (*Champion*).

This species is separable from *X. irrasus* by the structure of the interstices at the apex of the elytra, the dull colour, and shorter vestiture. It bears a certain likeness to *Hylastes subcostulatus*.

The four specimens show no marked sexual differences, and are probably all females.

3. **Xylechinus fuliginosus,** sp. n.

Oblongo-ovalis, opacus, fusco-pilosus, niger, antennis pedibusque piceis; rostro perbrevi haud carinato; prothorace transverso ad apicem constricto, subsquamoso, granulato, linea media subelevata; elytris dense

pilosis, punctato-striatis, interstitiis convexis uniseriatim pallide setosis, 2° ad apicem subdepresso absque setis.

Long. 2·2 millim.

Oblong-oval, dull black, with smoky-brown pubescence. Rostrum short, not carinate nor impressed at junction with the front, which is subconvex, dull, and closely granulate; pubescence very short and scanty, a little thicker over mouth; antennæ piceous-red with club black. Prothorax transverse, subparallel-sided to middle, then constricted to apex; surface covered with scattered light scales and short hairs, closely granulate, with a median subelevated line from base to middle. Elytra a little wider than prothorax and twice as long, rounded and crenate at base, sides subparallel to middle, apex obliquely rounded; surface with close short fuliginous subsquamous hairs, rather strongly punctate-striate; interstices convex, with a single series of short pale erect bristles from base to apex, except on the declivous portion of the 2nd and 4th. Legs black, knees and tarsi lighter. Upper margin of tibiæ with three spines.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Allied to *X. scabiosus*, but smaller, without the rostral carina, with shorter pubescence, particularly on the elytra, the setæ of which are more squamiform. The prothorax is more closely granulate, and the tibial spines are fewer and feebler.

4. **Xylechinus tessellatus,** sp. n.

Oblongus, piceus, squamis brunneis vestitus, pedibus ferrugineis; prothorace parum transverso, anterius subconstricto, supra granulato, rarius squamoso et piloso; elytris postice subdilatatis, squamis dilutioribus et obscurioribus tessellatis, subtiliter striatis, interstitiis planis uniseriatim setosis.

Long. 2·3 millim.

Oblong, dull, piceous. Head black, with mouth reddish, shortly pubescent; rostrum broad and short, not impressed, with a trace of a median carina; antennæ reddish, the 3rd joint rather short. Prothorax scarcely broader than long, with the sides rounded and subconstricted anteriorly, thinly covered with pale subsquamous hairs, granular, with traces of a median elevated line. Elytra wider than the prothorax at base and twice as long, subdilated behind, sides nearly straight, apex obliquely rounded; surface mottled with light and dark scales, the striæ fine, not clearly punctured, interstices flat, with a single series of squamiform bristles. Underside black, thinly pubescent. Legs and coxæ ferruginous; anterior tibiæ rather strongly dilated at apex, with five small spines on the upper border.

Hab. GUATEMALA, Volcan de Agua (*Champion*).

One example. A still smaller insect, quite easily separated from *X. scabiosus* by the flat interstices, but less readily distinguishable from the following species.

5. **Xylechinus marmoratus,** sp. n.

Oblongus, nigro-piceus, squamis flavo-cinereis in elytris hic illinc obscurioribus obtectus; pedibus nigris, tarsis modo rufescentibus; prothorace parum transverso, antice constricto, supra granulato; elytris subcylindricis, punctato-striatis, interstitiis squamis brevibus uniseriatim ornatis.

Long. 1·6–1·8 millim.

Similar to the preceding species, and not readily distinguished. Smaller, narrower, and more parallel-sided; head more shortly rostrate, the mouth darker, antennæ blackish. Prothorax more transverse, the scales shorter and less setiform. Elytra less broad in relation to the prothorax, the scales more uniformly cinereous, with the darker patches less conspicuous, the striæ distinctly punctured, bristles of the interstices shorter and more squamiform. Legs blackish, the tarsi above red; anterior tibiæ less dilated.

Hab. GUATEMALA, Panajachel, Capetillo, Volcan de Agua (*Champion*).

Four examples. The two latter species are tolerably like *X. pilosus* in appearance, and serve to link it with such a very dissimilar form as *X. irrasus*.

PHLŒOSINUS.

Phlœosinus, Chapuis, Syn. Scol. p. 37 (Mém. Soc. Liége, 1873, p. 245); Leconte, Rhynch. N. Am. p. 381.

Species of this genus, a separation from *Hylesinus*, under which name several of them have been described, have been recorded from the Palæarctic and Oriental regions, Japan, North and Central America.

In the latter region two have at present been found.

While the species of *Hylesinus* (*s. str.*) are attached to broad-leaved trees, those of *Phlœosinus*, of which the habits have been recorded, depredate upon Coniferæ, especially the Cupressineæ.

1. **Phlœosinus,** sp.

Hab. GUATEMALA, Quiché Mts. (*Champion*).

The two small specimens taken by Mr. Champion in the Quiché Mountains are probably only a varietal form of *P. dentatus* (Say); they were regarded by me as identical with *P. haagi*, Eichh., after comparison with the example of that insect in the Chapuis collection. Since then I have been able to see Eichhoff's original type, now in possession of Herr Schaufuss, and have been led to doubt the correctness of my former collation. A good series of *P. dentatus* has not been before me, and an examination of my own series of N.-American *Phlœosini*, together with examples of the recognized species lent me by Dr. Horn, has served only to increase the difficulty attending their recognition. They are all nearly allied, and, except in the case of examples taken together, there is a difficulty in correctly assigning the sexes. It is quite possible that the number of species existing in the United States is greater than has been supposed. My own specimen of *P. cristatus* (from Ricksecker) differs in various ways from that in Dr. Horn's possession, and I am unable to regard his example of *P. serratus* as the male of *P. dentatus*, as Mr. Schwarz has suggested. It is quite unlike examples of *P. dentatus* sent to me under the name of *P. graniger*, Chap., by Mr. Hopkins.

2. **Phlœosinus coronatus.**

Phlœosinus coronatus, Chap. Syn. Scol. p. 39 (Mém. Soc. Liége, 1873, p. 247) [1].

Hab. MEXICO, Yucatan [1].

This species was described from a single immature specimen. Therefore it would be useless to add anything to the original diagnosis.

EULYTOCERUS, gen. nov.

Caput rostratum; oculi oblongi, integri; antennarum funiculus 5-articulatus, articulis latitudine paullo crescentibus, clava oblonga, subreniformis, articulis tribus liberis composita, 1° subtriangulari angulo apicali inferiore producto, 2°–3° transversis subtus productis. Coxæ anticæ anguste separatæ; tibiæ superne rotundatæ, serratæ; tarsorum articulus 3 simplex.

Head rostrate; eyes oblong, entire; antennæ inserted before the lower angle of the eye at the sides of rostrum, but above the mandibles, in a pit separated by a plica from the anterior surface; scape strongly clubbed, the funiculus short, 5-jointed, its 1st joint globose, the remaining joints transverse, increasing in width; club oblong, subreniform, pubescent, three-jointed, the joints loosely articulate, the 1st triangular, about as long as broad, with the apical border oblique and the lower angle produced, the 2nd and 3rd joints transverse, oblique. Prothoracic pleura strongly inflexed, but not separated from the dorsum by a lateral border. Elytra separately rounded and overlapping the prothorax at the base. Anterior coxæ separated by a narrow prosternal process, middle coxæ large, globose, remote; mesosternum and metasternum short; 1st abdominal segment as long as the 2nd and 3rd together, its intercoxal process acute. Tibiæ curved, the upper margin rounded and serrate, lower apical angle with a short uncus; tarsi with joints 1–3 equal, simple.

Allied to *Dryotomus*, Chap., and *Aricerus*, Blandf.; separated from the former by the antennal club, which in *Dryotomus* is constructed as in *Phlœotribus*, and by the less remote anterior coxæ; from *Aricerus*, an Australian genus, it is distinguished by the transverse apical joint of the club, the structure of the anterior tibiæ, and the simple 3rd tarsal joint.

1. **Eulytocerus championi,** sp. n. (Tab. VI. figg. 19; 19 *a*, antenna.)

Oblongo-ovalis, subopacus, brunneus, breviter pilosus; prothorace transverso, lateribus valde rotundatis, dense rugoso-punctato, linea media elevata lævi; elytris prothorace latioribus, punctato-striatis, interstitiis subconvexis multipunctatis, breviter pilosis, uniseriatim setosis.

Long. 4 millim.

Oblong-oval, scarcely shining, brown. Front (♂) excavate to the eyes, the fundus subnitid, finely punctate, with short erect pubescence; rostrum tuberculate over mouth, arcuately impressed at base. Prothorax transverse, widest before the bisinuate base, the sides strongly rounded and somewhat contracted in front, the apex obtuse and subproduced, completely hiding the vertex, and separated from the pleura by a distinct though non-bordered flexure; surface close, with very strong, rugose punctuation, the median line elevated, shining, abbreviated. Scutellum minute. Elytra wider than the prothorax and a half longer, margined but not crenate at base, the humeral angles obliquely rounded, the sides slightly rounded but not narrowed before the hinder third; surface convexly declivous for the hinder two-thirds, punctate-striate, the striæ not deep, with close, large, subquadrate punctures, interstices narrow, slightly convex, shining, finely multipunctate, and very shortly pilose, with scanty uniseriate setæ. Legs piceous, the tarsi lighter.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One example, doubtless a male. Owing to the deep frontal excavation, the head is entirely concealed from above as in a Tomicid, though the relationship of the genus to *Phlœotribus* is close and unmistakable. The scape is fringed towards the apex.

PHLŒOTRIBUS.

Phloiotribus, Latreille, Préc. car. gén. Ins. p. 50 (1796).
Phlœotribus, Chapuis, Syn. Scol. p. 43 (Mém. Soc. Liége, 1873, p. 251); Leconte, Tr. Am. Ent. Soc. 1868, p. 148.

This genus is readily distinguished by the lamellæ into which the joints of the antennal club are produced on their inner side. The species previously described number seventeen, of which all, except four, are American. They differ very much in the length of the antennal lamellæ, but this character must be employed carefully in differentiation, as no abrupt line of demarcation can be drawn between the species with long and those with short lamellæ.

The males are to be distinguished by the possession of one or more of the following characters:—a frontal impression; development into tubercles or blunt spines of the ridges forming the anterior boundary of the antennal pits; a pencil of long hairs on the scape; and, in those species which have the anterior half of the prothorax tuberculate, a uniform distribution of the granules, which in the females are aggregated towards the anterior angles.

The insertion of the antennæ is stated to be frontal; this is apparent in some species, but not in those in which the ridges bounding the antennal pits in front form the lateral margins of the frontal area. It is, however, true that the point of insertion lies constantly above and not on a line connecting the middle of the eye and the side-border of the mandible.

1. Club of antenna not twice as broad as long, its lamellæ short, semi-crescentic, tapering from base to apex; elytra pilose . . . . . 2.
   Lamellæ of club elongate, parallel-sided; elytra with seriate bristles or subglabrous . . . . . 3.
2. Elytra thinly covered with short stiff hairs . . . . . *discrepans*, sp. n.
   Elytra with fine decumbent pubescence, interstices with uniseriate hairs. *nubilus*, sp. n.
3. Elytral bristles short, scale-like, forming a double row on at least the sutural interstice . . . . . *scabratus*, sp. n.
   Elytra without perceptible series of bristles; form short-oval (length over 3 millim.) . . . . . 4.
   Elytral interstices with distinct uniseriate hairs . . . . . 5.
4. Prothorax with a median smooth line . . . . . *obliquus*, Chap.
   Prothorax without trace of a median line . . . . . *sulcifrons*, Chap.
5. Prothorax uniformly granulate or rugose . . . . . 6.
   Prothorax with basal half smoother than apical half . . . . . 7.
6. Elytra black; interstices convex, very narrow . . . . . *demessus*, sp. n.
   Elytra brown; interstices flat, less narrow . . . . . *asperatus*, sp. n.
7. Anterior border of prothorax without prominent tubercles . . . . . 8.
   Anterior border of prothorax with four prominent tubercles . . . . . *biguttatus*, sp. n.
8. Elytral setæ coarse, pale; form oblong-oval . . . . . 9.
   Elytral setæ fine, black or fuscous; form oval . . . . . 10.

9.	Alternate interstices of the elytra strongly spinose towards apex, its margin acutely serrate	*armatus*, sp. n.
	Elytra finely and uniformly tuberculate towards apex, its margin subserrate	*setulosus*, Eichh.
10.	Base of the prothorax distinctly produced behind	*subovatus*, sp. n.
	Base of the prothorax truncate	*sodalis*, sp. n.

1. **Phlœotribus discrepans**, sp. n.

Oblongus, subcylindricus, subopacus, breviter setosus, piceo-niger, pedibus rufescentibus; antennarum clava ovali, articulis breviter productis composita; prothorace subtransverso, anterius æqualiter angustato, reticulato-punctato; elytris striato-punctatis, interstitiis confertim rugosis biseriatim breviter setosis.

Long. 2·2 millim.

Oblong, subcylindrical, rather dull; head and prothorax black, the elytra piceous. Head closely shagreened, the front subconvex, with scanty light pubescence, the mouth ciliate; antennæ short, testaceous-brown, the club black, transversely acuminate-oval when closed, the first two joints semi-crescentic and tapering from the base. Prothorax a little broader than long, with the sides narrowed from the base and slightly rounded, the apex separately and obtusely rounded; hind angles nearly rectangular, basal margin transverse, bisinuate; surface with thin short pubescence, very finely and closely reticulate and obscurely punctured, the median line obsoletely elevate. Scutellum small, rounded. Elytra twice as long as the prothorax and a little wider, with the basal margins rounded and finely serrate, slightly narrowed towards the apex, the hind margin subarcuately rounded; surface cylindrical to hinder third, thence convex and obliquely declivous, irregularly striate-punctate, the punctures close, the striæ very faintly impressed; interstices throughout with very close transverse wrinkles and irregular double rows of close, short, erect setæ. Underside piceous, thinly pubescent; the anterior coxæ rather narrowly separated. Legs piceous-red, the tibiæ rather broadly dilated, with the teeth nearly obsolete.

Hab. Panama, Volcan de Chiriqui (*Champion*).

In appearance this insect, of which but one example was taken, most closely resembles *Phrixosoma rude*, from which it is best distinguished by the structure of the antennal club and the indistinct thoracic indentation. It would be better to separate it entirely from *Phlœotribus*, but the one example, which cannot be dissected, affords no special characters on which to do so. The form is more elongate and cylindrical than in any other member of the genus, and approximates to that of the species of *Polygraphus*.

2. **Phlœotribus nubilus**, sp. n.

Oblongus, opacus, rufo-piceus, pube fusca vestitus; antennarum clava breviter lamellata; prothorace subtransverso, supra subtiliter punctato et ad latera granulato; elytris punctato-striatis, interstitiis planis, pilosis, uniseriatim setosis, ad basin granulatis.

Mas. Fronte impressa.

Long. 2·4–2·7 millim.

Oblong, dull reddish-piceous, with short fuscous-brown pubescence. Head blackish, finely reticulate, front shortly pubescent, impressed in the male; antennæ piceous-red, the club black, oval when closed, with oblique sutures, the two basal joints semicrescentic. Prothorax a little broader than long, semielliptic, its hind angles rectangular, the sides and apex rounded, piceous-red, weakly impressed on either side behind the middle, with short scanty pubescence, finely and closely punctured, granulate towards the sides and apex, more strongly in the male. Elytra wider at base than the prothorax and one-half longer, their basal margins rather strongly elevated and rounded, the sides subparallel, the apex subobliquely

rounded; piceous, with basal border lighter, closely pubescent, striate, the interstices nearly flat, granulate towards base, and with a single series each of erect bristles. Underside and legs piceous, the former rather closely pubescent; anterior tibiæ with the upper border dilated at apex into a rounded, shortly dentate lobe.

Hab. MEXICO, Motzorongo in Vera Cruz (*Flohr*); GUATEMALA, Cerro Zunil (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Numerous specimens were taken. The vestiture and coloration of this species are of a very common Hylesinid type, and resemble that of *Cissophagus*. They are, however, unusual in *Phlœotribus*, with which the generic characters of this species agree.

3. **Phlœotribus scabratus,** sp. n.

Oblongo-ovalis, opacus, piceus, breviter fulvo-setosus; prothorace valde transverso, lateribus rotundatis, antice constrictis, supra dense exasperato; elytris striatis, interstitiis fortiter rugosis et setis squamæformibus prope suturam modo biseriatim compositis instructis.

Long. 2·8 millim.

Oblong-oval, dull, piceous-brown, with short, fulvous, setose hairs. Head finely shagreened, front impressed, shortly pubescent; antennæ red, the scape fringed, the club infuscate, with moderately long lamellæ. Prothorax transverse, the hind angles rounded, the sides obliquely rounded from before the base and constricted anteriorly, surface covered with close rugose asperities and scattered, short, decumbent hairs. Scutellum rounded, rugose. Elytra a little wider than the prothorax and two-thirds longer, rounded and crenate at base, the sides parallel, the apex rounded, its margin not prominent; rather coarsely striate, the interstices subconvex, with close, strong, transverse rugæ and short, erect, squamiform hairs arranged in an irregular double or treble row on the sutural interstice throughout, and on the inner interstices from the base to the middle, towards the apex and sides in a single row. Underside and legs piceous or ferruginous; anterior tibiæ widened and subtruncate at apex, rather strongly toothed on the upper margin.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

This insect, described from two examples, rather strongly resembles *Eulytocerus championi* in shape and the character of its sculpture, though it does not approach it in the antennal structure. The specimens show no sexual difference, and are probably both males.

4. **Phlœotribus obliquus.**

Phlœotribus obliquus, Chap. Syn. Scol. p. 45 (Mém. Soc. Liége, 1873, p. 253) [1].

Short-oval, rather dull, black, the antennæ and legs piceous. Head large, short, finely punctured, with short, erect pubescence, front impressed (♂), convex (♀); antennæ inserted far forward, the scape (♂) fringed. Prothorax subhemispherical, slightly contracted in front, densely punctured except over an irregular subcarinate median line from the base to the middle, scarcely pubescent, the sides and apex muricate. Elytra wider than the prothorax and nearly twice as long, the sides rounded throughout, more strongly towards the apex, of which the margin is not prominent; with crenate striæ, the interstices subconvex, with elevated rugæ, close and irregular at the base, becoming transverse and more remote about the middle and diminishing to single series of tubercles on the apical third, which, except for these, is smooth and shining. Anterior tibiæ gradually dilated and obsoletely spined.

Length 3·5 millim.

Hab. MEXICO [1].—COLOMBIA [1].

This species is not represented in our collection. In that of Chapuis there are one from Mexico and three from Colombia, formerly in that of Dejean. It is perhaps the insect referred to by Lacordaire (Gen. Col. vii. p. 365, nota 2) under the name *P. mexicanus*.

5. **Phlœotribus sulcifrons.**

Phlœotribus sulcifrons, Chap. Syn. Scol. p. 45 (Mém. Soc. Liége, 1873, p. 253) [1].

Black or obscurely piceous. Closely akin to *P. obliquus* in size and general appearance, but rather more opaque, and differing in the sculpture. The prothorax is hemispherical and not contracted, much more closely punctured, and with no trace of a median elevated line. The elytral striæ have a more defined border and appear incised; their punctures are closer. The interstices are flat throughout, quite opaque, with much closer and finer asperities, forming two or three rows on each to behind the middle; towards the apex the tubercles are finer and inconspicuous, and the interspaces are closely granular and not smooth and shining.

Length 3–3·6 millim.

Hab. Guatemala, Las Mercedes (*Champion*); Panama, Bugaba (*Champion*).—Colombia [1].

This species, hitherto known by a single example in Chapuis's collection, has been taken abundantly by Mr. Champion at Bugaba, and is almost the only Scolytid represented in our collection by a really long series.

The frontal sulcus, from which character the species derives its name, is an unimportant and inconstant character. When present, it extends from the vertex to the interocular space, and is distinct from the ordinary rostral impression in the male.

This and the preceding species possess bristles on the elytra, which may be seen with powerful amplification; but they are so much finer than in all other Central-American species that they may be treated as non-existent for diagnostic purposes.

6. **Phlœotribus demessus,** sp. n.

Ovalis, opacus, niger, antennis tarsisque rufescentibus, flavo-pilosus; prothorace granulato; elytris punctato-striatis, interstitiis angustis convexis, dense fortiter asperatis et setis erectis squamæformibus uniseriatim instructis.

Mas. Fronte impressa.

Long. 2 millim.

Oval, black, rather dull. Head finely granulate, front thinly pubescent, impressed (♂), convex (♀); antennæ pitchy-red, club infuscate, the lamellæ not very long, scape with a few short hairs in the male. Prothorax transverse, subhemispherical, sides and apex almost uniformly rounded, hind angles rounded, hind margin bisinuate and somewhat depressed; surface closely rugose, with large, shallow, confluent punctures and scattered, short, semierect, yellow hairs. Scutellum small, rounded, convex. Elytra scarcely wider at base than the prothorax and about one-half longer, their basal borders rounded, crenate, and everted, apex circularly rounded, not strongly margined; surface convex from base to apex, more strongly behind middle, with strong, wide striæ impressed with large circular punctures; interstices narrow, elevated, with close transverse rugæ, becoming subspinous posteriorly, and conspicuous, yellow, erect, squamous setæ arranged in single series, sometimes becoming double for a short distance. Underside black; legs piceous black, with tarsi lighter; serration of front tibiæ fine.

Hab. Mexico, Toxpam (*Sallé*); Panama, Bugaba (*Champion*).

Three examples from Toxpam represent this species in M. Sallé's collection. The single specimen taken by Mr. Champion at Bugaba is a little smaller, and differs in having the bristles on the elytra regularly uniseriate from base to apex, whereas in the Toxpam examples most of the rows are biseriate in some part of their course, but only for a very short distance. The sutural row is regularly uniseriate in all the specimens.

7. **Phlœotribus asperatus,** sp. n.

Oblongo-ovalis, subopacus, piceo-niger, elytris brunneis; prothorace hemisphærico, rugose granulato, parce piloso; elytris crenato-striatis, interstitiis transverse rugosis et a basi setis erectis uniseriatis instructis.

Long. 2·5 millim.

Oblong-oval, rather dull, piceous-black, the elytra brown, with darker lateral margins. Head dull, reticulate, front impressed (♂), and obscurely bituberculate between the eyes. Prothorax semiglobose, granulate, with close rugose punctures and small tubercles at the front and sides, and with rather thin but conspicuous pubescence of short yellowish hairs. Elytra wider than the prothorax and a little more than twice as long, nearly parallel-sided to the middle; the apical margin rather obliquely rounded, subserrate, surface crenate-striate, the striæ punctured; interstices with rather strong transverse or tuberculate elevations and conspicuous yellow bristles in uniseriate rows from base to apex. Underside and legs piceous-black, the knees and tarsi lighter; anterior tibiæ rather strongly expanded at apex.

Hab. GUATEMALA, Panajachel (*Champion*).

One specimen alone was taken. This species resembles *P. setulosus*, but is distinguishable by the more granulate and rugose thorax, the stronger elytral striæ, and the rows of very conspicuous bristles from base to apex of the elytra.

8. **Phlœotribus armatus,** sp. n.

Mas. Suboblongus, convexus, subnitidus, piceus, breviter setosus; prothorace subhemisphærico, anterius sparsim tuberculato, posterius rugose punctato; elytris striatis, interstitiis planis fortiter transverse rugosis, et in declivitate alternatim spinosis, margine apicali acute serrato.

Long. 2·5 millim.

Male. Somewhat oblong, convex, piceous. Head finely punctured, front impressed. Antennæ reddish, the club black, the scape ciliate. Prothorax nearly hemispherical, but with a trace of constriction anteriorly, and the apex more obtuse, surface thinly pubescent, finely rugose, with shallow scattered punctures over the basal half, towards apex with sparse tubercles. Scutellum small, transverse. Elytra double as long as the prothorax, subdilated posteriorly, their basal margins not strongly rounded, crenate, the sides straight, the apical margin acutely serrate; piceous-brown, with the sides darker, slightly convex from base to declivity, striate, the striæ closely punctured, interstices flat, with strong, close, transverse rugæ, becoming tuberculate behind, and continued as spines on the declivous portions of the first and succeeding alternate interstices; interstitial setæ extending from base to apex, longer and semierect behind. Underside piceous; legs pitchy-red, anterior tibiæ strongly spined.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

A single male of this species was taken. The elytra are more strongly spinous than in any other *Phlœotribus* known to me, and the species cannot well be confounded with any at present described.

9. **Phlœotribus setulosus.**

Phlœotribus setulosus, Eichh. Berl. ent. Zeitschr. 1868, p. 149[1]; Chap. Syn. Scol. p. 44 (Mém. Soc. Liége, 1873, p. 252)[2].

Oblong-oval, rather shining, lighter or darker piceous-brown or obscure ferruginous, the elytra usually lighter than the prothorax. Head (♂) sulcate, with the antennal ridges prominent; head (♀) subconvex, with an arcuate impression at the base of the rostrum; antennæ testaceous, with the club infuscate, its lamellæ long; scape (♂) ciliate with a pencil of very long hairs. Prothorax little broader than long, semi-elliptical (♂), with weak uniformly-scattered tubercles towards the apex; subtrapezoidal (♀), with the anterior angles muricate; the basal half with shallow subvariolose punctures intermingled with finer points. Elytra scarcely wider than the prothorax, their basal borders not very prominent, the sides subparallel, the apical margins serrate, but not acutely; surface usually with an infuscate spot in the middle of each lateral margin, crenate-striate, interstices flat, with series of transverse rugæ becoming tuberculiform posteriorly and short pale erect setæ, more apparent towards the apex.
Length 1·8–2·4 millim.

Hab. GUATEMALA, Cerro Zunil, El Tumbador, Chacoj (*Champion*); PANAMA, Bugaba (*Champion*).—COLOMBIA[2].

The numerous examples we have received, chiefly from Bugaba, vary in size, depth of colour, shape, and in the length of the lamellæ of the antennal club. Some five or six specimens from Cerro Zunil and Bugaba are smaller than the rest and more oval in shape; they may possibly be distinct, and there are indications that the series may prove to consist of as many as three species, though it would be premature to divide it without study of more material.

The species appears to be common in Tropical America, and may have a wider distribution than that given above, for examples occur in various collections under the name *P. setulosus*, the authorship of which was referred by Chapuis[2] to Klug, who appears never to have published an account of the insect. Eichhoff[1] described the species, under Klug's MS. name, as from "Carolina"; this was obviously a slip of the pen. His type, which I have seen, is labelled "Columbia."

10. **Phlœotribus subovatus,** sp. n.

Breviter ovalis, convexus, subnitidus, niger vel testaceus (immaturus), parce pilosus; fronte media impressa; prothorace hemisphærico, antice tuberculato, postice irregulariter punctato, ante basin utrinque leviter impresso; elytris crenato-striatis, interstitiis fere planis, uniseriatim tuberculatis et nigro-setosis.
Mas. Fronte latius sulcata, prothorace æqualiter tuberculato.
Fem. Prothorace ad angulos anticos muricato.
Long. 2·3 millim.

Short-oval, convex, black or testaceous (immature). Head with a frontal impression in both sexes, varying from a short linear sulcus to a small depressed pit; front (♂) broadly sulcate in addition; antennæ piceous-red with the club black, scape ciliate in the male. Prothorax hemispherical (♂), somewhat truncate (♀) with the anterior angles indicated by a few prominent tubercles, the disc subimpressed on either side behind the middle and with the posterior median process rather acute and slightly elevated, moderately shining, with rather close shallow punctures, the anterior third (♂) with uniform scattered tubercles, finer and less frequent (♀), except at the anterior angles. Scutellum rounded, convex. Elytra not evidently wider than the prothorax, and one-half longer, their basal borders strongly crenate, the sides rounded throughout, more strongly towards the apex, the lateral border of which is not prominently

serrate; surface convex, punctate-striate, the striæ rather deep and crenate, interstices nearly flat, with a single series of somewhat tuberculate rugæ, finer towards apex, and bearing short fuscous-black bristles. Underside and legs piceous-black, the tarsi lighter.

Hab. GUATEMALA, El Reposo (*Champion*).

Twelve specimens were taken, of which the majority were immature. This species can be separated from *P. setulosus* and other closely allied forms by the fact that the elytral bristles appear black or deep fuscous, even in immature examples. To it must be referred for the present a single example from British Honduras (*Blancaneaux*). The specimen, a female, differs little except in length (1·7 millim.), being not more than half as large as normal specimens of *P. subovatus*; it is a little narrower, the front has no arcuate impression, the thoracic tubercles are nearly obsolete, and the elytral interstices less prominently wrinkled. These features are all consistent with depauperization.

11. **Phlœotribus sodalis,** sp. n.

Ovalis, convexus, subnitidus, nigro-piceus, elytrorum disco pedibusque rufescentibus, breviter parce fusco-pilosus; prothorace transverso, antice subangustato, irregulariter rugose punctato, anterius tuberculato; elytris crenato-striatis, interstitiis transverse rugosis et seriato-setosis, in declivitate spinose tuberculatis, margine apicali serrato.

Long. 2·7 millim.

Mas. Fronte impressa; prothorace anterius æqualiter tuberculato; interstitiis alternis in declivitate fortius tuberculatis.

Fem. Prothoracis angulis anticis muricatis; interstitiis æqualiter tuberculatis.

Oval, convex, moderately shining. Head black, vertex dull, shagreened and punctured, front (♂) subnitid, impressed, and with a short median linear sulcus and prominent lateral tubercles, convex (♀) with an arcuate transverse impression; antennæ piceous-red with the club infuscate, scape (♂) with a long pencil of fuscous hairs. Prothorax transverse, subconstricted towards apex, and not hemispherical, the apex more obtuse in the female, base obtuse; surface piceous, lighter towards middle of base, indistinctly elevated along middle, with scanty erect hairs, subcoriaceous, with shallow rugose punctures of different sizes, the front half with scattered asperities (♂), weaker or absent (♀), with the anterior angles muricate. Elytra twice as long as the prothorax, with which they complete a uniform oval, the basal borders not strongly elevated nor crenate, the apical margin somewhat acute and serrate; surface piceous-brown, darker at sides and round scutellum, with crenate indistinctly punctured striæ, interstices nearly flat, with transverse elevated rugæ replaced on the declivity by small spinous tubercles, rather more prominent on the first and alternate interstices in the male, the seriate bristles obscure brown. Underside black, pubescent. Legs piceous-red.

Hab. GUATEMALA, Panajachel, Cerro Zunil (*Champion*).

Three specimens, of which two are females, were taken at Cerro Zunil, and from these the description has been drawn up. The example, a female, from Panajachel differs in some respects: it is black with the tarsi and antennæ (except the club) alone reddish; the prothorax is more strongly tuberculate in front near the middle line, and the punctuation of its basal half is stronger and less irregular; the basal margins of the elytra are more elevated and crenate, the interstitial rugæ are stronger and the hairs more infuscate.

12. **Phlœotribus biguttatus,** sp. n.

Mas. Ovalis, convexus, piceus, elytris subluteo-ferrugineis, ad latera utrinque nigro-maculatis; prothorace amplo, semigloboso, punctato, apice tuberculis in lineis duabus, 4 anticis in margine prominulis exstructo; elytris crenato-striatis, interstitiis subconvexis, rugis transversis setiferis munitis.

Long. 2·3 millim.

Male. Oval, convex, subnitid. Head black, rufescent over the mouth, finely punctured, front concave, bituberculate between the prominent lateral borders of the antennal pits; antennæ ferruginous, the scape slender, strongly clubbed at the tip, fringed, the club blackish, with elongate lamellæ. Prothorax ample, hemispherical, and widest at the base, which is bisinuate and not produced backwards; piceous-black with the hind margin lighter, subimpressed on either side behind the middle with shallow subrugose punctuation, and scattered erect hairs round the margins, with two concentric lines of tubercles towards the apex, the anterior line with four prominent tubercles on the margin, and with feeble granulation between the posterior line and the middle. Scutellum transverse, convex, piceous. Elytra one-third longer than the prothorax, and a little wider at the extreme base, the basal margins rounded, everted and crenate, the sides straight and subconvergent to the hinder third, thence rounded to the apex, and sharply bordered below; surface convex from the anterior third to the apex, ferruginous with a luteous tinge, and with the extreme margin and a large lateral spot connected with it about the middle of each side black, crenate-striate, the striæ deep with confluent punctures, interstices subconvex with transverse elevated rugæ from base to apex, bearing short erect bristles. Underside black, legs ferruginous; tibiæ not strongly spined, the tarsi long and slender.

Hab. Panama, Bugaba (*Champion*).

This species is quite distinct from any other *Phlœotribus*, and is represented by a single male specimen. The impressed head is scarcely visible from above, and this peculiarity, together with the prominent marginal tubercles of the prothorax, gives it a certain likeness to a Tomicid.

CHRAMESUS.

Chramesus, Leconte, Tr. Am. Ent. Soc. 1868, p. 166; Rhynch. N. Am. p. 375.
Rhopalopleurus, Chapuis, Syn. Scol. p. 46 (Mém. Soc. Liége, 1873, p. 254).

This genus is readily recognized by the structure of the antennæ, which are inserted towards the front immediately before the middle of the eyes; they have a short five-jointed funiculus and a large flattened solid club which is attached to the funiculus by its superior margin. The antennal groove is almost absent.

In appearance the species are small, short-oval, convex, and pilose or subsquamous.

The genus was associated with *Polygraphus* by Leconte on account of its solid antennal club and the simple third tarsal joint. It seems, however, to be associated more naturally with *Phlœotribus*; I regard the insertion of the antenna as frontal rather than lateral, though the change of position is slight. The shape of the antennal club and its attachment to the shaft would be precisely paralleled by the antenna of *Eulytocerus* if the joints in the club of the latter insect had become fused and the sutures obsolete.

The species of *Chramesus* are found in North, Central, and South America and the Antilles. Three are found in our region.

Elytra fuscous, with rows of conspicuous pale bristles . . . . . *icoriæ*, Lec.
Elytra covered with ashy-grey pubescence, and with a median brown patch, the bristles conspicuous, pale . . . . . *pumilus*, Chap.
Elytra red-brown, the bristles inconspicuous, not pale . . . . . *tumidulus*, sp. n.

1. Chramesus icoriæ.

Chramesus icoriæ, Lec. Trans. Am. Ent. Soc. 1868, p. 168[1]; Rhynch. N. Am. p. 375[2].
Rhopalopleurus lecontei, Chap. Syn. Scol. p. 47 (1869) (Mém. Soc. Liége, 1873, p. 255)[3].

Hab. North America[3], Middle and Western States[1 2], Virginia (*Hopkins*).—Guatemala, Capetillo (*Champion*).

In the single specimen from Guatemala the median bristles of the interstices are more prominent than in North-American examples and the scales are shorter. There are no other differences of importance, and I do not regard it as distinct.

2. Chramesus pumilus.

Rhopalopleurus pumilus, Chap. Syn. Scol. p. 47 (Mém. Soc. Liége, 1873, p. 255)[1].

Hab. Mexico, Teapa[1].

I have received several specimens of this insect from M. Grouvelle out of imported bales of Mexican or Brazilian tobacco. It is rather smaller than *C. icoriæ*, and readily recognized by its vestiture of close ashy-grey scales, which are brown over an ill-defined patch on the prothoracic disc and a wide vitta covering the greater portion of the posterior half of the elytra, but not including the apex. The interstices are set with rows of bristles. Chapuis describes the scales as luteous; I have had the advantage of seeing his type specimen, but cannot detect any such coloration in them.

3. Chramesus tumidulus, sp. n. (Tab. VI. figg. 20; 20 *a*, antenna.)

Breviter ovatus, convexus, subopacus, fusco-piceus, elytris ferrugineo-brunneis, antennis subinfuscatis, squamis perbrevibus flavo-cinereis aspersus; prothorace semigloboso, conferte punctato, subtiliter reticulato; elytris punctato-striatis, interstitiis fere planis, setis brevibus e granulis minutis egredientibus uniseriatim instructis.

Long. 2 millim.

Mas. Fronte impressa.

Short-oval, robust, convex. Head black, subglabrous, the mouth rufescent; front (♂) broadly impressed, subnitid over the mouth, the side margins raised and tuberculate, the vertex dull, front (♀) somewhat flattened, dull, finely punctured; antennæ fusco-ferruginous. Prothorax hemispherical, widest at base, very slightly constricted in front, the sides and apex rounded, hind margin bisinuate and produced backwards in an obtuse angle; disc convex, fuscous-black, covered uniformly with minute scattered cinereous scales, and with a few short hairs round the margins, rather dull, finely and closely reticulate, and rather closely punctured, the punctures submuricate towards the sides and apex. Scutellum minute, rugulose. Elytra as wide at the base as the prothorax, and more than one-half longer, their basal margins rounded, crenate, and elevated, the sides nearly straight to behind the middle, and thence rounded; above convex from base to apex, more strongly behind the middle, red-brown, rather strongly punctate-striate, the punctures rounded; interstices very slightly convex, covered with very short and not

contiguous decumbent yellow-cinereous scales, and with single series of short setæ arising from minute granular elevations, the base of the sutural interstices impressed. Underside fuscous, pubescent; legs ferruginous.

Hab. GUATEMALA, Las Mercedes (*Champion*); PANAMA, Bugaba (*Champion*).

One example of different sex was taken at each locality. The species compared with *C. icoriæ* is broader and more robust; the antennæ, particularly the club, are more infuscate; the prothorax is shorter, more regularly rounded at the sides and apex, and produced more at the base; its surface is less conspicuously squamous and more finely sculptured. The elytra are brighter in colour, more strongly striate, with shorter scales and setæ, and the rugosities towards the base inconspicuous.

PROBLECHILUS.

Gymnochilus, Eichhoff, Berl. ent. Zeitschr. 1867, p. 399.
Problechilus, Eichhoff, Rat. Tom. p. 167.

The species comprising this genus are easily distinguished by their short-oval *Cryphalus*-like form, by the possession of a seven-jointed antennal funiculus, and an oval flattened club, the sutures of which are curved and superficial. The prothorax is margined at the sides almost to the apex, where the marginal line is curved upwards to become lost in the anterior row of asperities. Two have been described—one from Mexico, and the other from Colombia and Venezuela (*Moritz*).

The original name of the genus, *Gymnochilus*, was changed by Eichhoff in order not to clash with *Gymnocheila* (or *Gymnochila*), which had been employed by Klug in 1834 for a genus of Coleoptera. The name substituted may be therefore conveniently retained.

1. **Problechilus consocius**, sp. n.

Ovalis, suboblongus, opacus, sat dense breviter pubescens, fusco-niger, prothoracis margine apicali et limbo basali obscure ferrugineis, pedibus piceis; prothorace semigloboso asperato, disco posterius distincte elevato, ad basin granulato-punctato; elytris punctato-striatis, interstitiis planiusculis, alternis setis tenuibus seriatis, 2° in declivitate vix angustato nec impresso.

Long. 2·6 millim.

Intermediate between *P. zonatus*, Eichh., and *P. reitteri*, Eichh. Oval, somewhat oblong, dull, with very short dense velvety pubescence. Head black, distinctly subrostrate, with close subgranulate punctuation, front somewhat flattened, very shortly pilose, with an arcuate impression at the base of the rostrum, anterior to a subelevated and slightly shining transverse line, the sides subcallose along the inner angles of the eyes; mouth with short fringe, the mandibles rather prominent; eyes oblong, narrow, entire; antennæ inserted under the elevated margin of the rostrum, testaceous-brown, the club infuscate, ovate. Prothorax subhemispherical, transverse, the sides and apex conjointly rounded, the hind angles somewhat truncate, the basal margin subtransverse and impressed on either side, the side margins bordered; disc ample, elevated and subnodose towards the base, fuscous-black, with the middle of the apex and a basal vitta obscure ferruginous, asperate and very slightly shining before the elevation, the asperities tending to form transverse lines, the base closely and finely granulate-punctate. Scutellum very small, rounded and granulate. Elytra ovate, at their widest point a little broader than the prothorax, and two-thirds longer, subtransverse at base, the humeral angles rounded, callose, the sides subampliated towards the

middle, and thence rounded in an elliptic curve to the apex of the suture; surface convex, obliquely declivous behind the middle, dull, and finely pubescent with dark hairs, fuscous-black, with an obscure brownish tinge towards the base, striate, the striæ fine and obsoletely punctured; interstices almost flat, the first and succeeding alternate interstices with fine uniseriate setæ, the second not impressed, and scarcely narrowed towards apex. Underside entirely fuscous-black, with short cinereous pubescence. Legs piceous.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

One example. Extremely like the following species, with which, however, it is impossible to associate it even as a variety: it is rather larger, with the elytra distinctly more elongate and less obtuse behind; darker in colour, with the elytra not lighter towards the apex, the legs entirely piceous, and the abdomen fuscous-black. (In *P. reitteri* the elytra are usually, though not invariably, rufescent behind, the femora at least are testaceous, and the abdomen is testaceous-red.) The head is more distinctly rostrate in *P. consocius*, the elytral striæ are much shallower towards the apex, the interstices are flatter, duller, and the second is not impressed behind; the setæ on them are more numerous, longer and finer, whereas in *P. reitteri* they are short, thickened, blunt, and conspicuously pale. The sculpture of the rostrum will probably be found to differ in the two sexes.

2. **Problechilus reitteri.** (Tab. VI. figg. 21; 21 *a*, antenna.)

Problechilus reitteri, Eichh. Rat. Tom. p. 169[1].

Hab. MEXICO[1], Jalapa (*Höge*), Orizaba (*Bilimek*); GUATEMALA, Zapote, Guatemala city (*Champion*); PANAMA, Bugaba (*Champion*).

The four specimens taken at Orizaba, now in the Vienna Museum, and the one from Jalapa, agree with the type which has been communicated by Herr Schaufuss, its present possessor. Their length is about 2·3 millim. The fifteen examples of Mr. Champion's collecting are all rather smaller (2 millim.), and slightly darker, the apex of the elytra, the knees, or tibiæ being sometimes infuscate. But the abdomen is always rufo-testaceous, and the femora pale, and it is sufficient to regard the more southern series as merely varietal.

The basal testaceous patch on the prothorax is usually continuous from side to side, but is occasionally divided by a prolongation backwards of the dark area. The rostrum may be sculptured as in the preceding species, with a narrow side-margin, which does not extend to the upper angle of the eye, or it may be simply subconvex. The difference is apparently sexual.

3. **Problechilus minor,** sp. n.

Ovalis, suboblongus, sat dense breviter pubescens; fusco-niger, prothoracis apice et limbo basali testaceis, elytris testaceis, sutura et lateribus nigricantibus, vel omnino fusco-nigris, pedibus et abdomine testaceis; prothorace granulis minus confertis asperato; elytris minus opacis, tenuiter striatis, striis distincte punctatis, in declivitate profundioribus, interstitiis alternis uniseriatim setosis.

Long. 1·6–1·8 millim.

Smaller than either of the two preceding species, less broadly ovate than *P. reitteri*; covered with moderately dense, short, cinereous-yellow, decumbent pubescence. Head black, the front (? ♂) flattened, subnitid, with a shining subcarinate side-margin in front of the upper part of the eye and the antennal pit; front (? ♀) slightly convex, dull, and granulate, with the side-margin indistinct; labrum rufescent; antennæ light testaceous, with the club infuscate. Prothorax transverse, suborbicular, as in *P. consocius*; its disc with the postmedian elevation indistinct, fuscous-black, with the apex and a basal fascia testaceous, or entirely testaceous with an ill-defined darker shade, granules over the anterior half sparser and less evidently arranged in lines. Elytra at base almost wider than the prothorax, and more than one-half longer, with the sides subparallel to the middle, thence rounded to the apex, scarcely as obliquely as in *P. consocius*; their surface usually testaceous, with the side and sometimes the sutural margins infuscate, more rarely entirely fuscous-black, with very shallow striæ, deeper posteriorly, the sutural stria more impressed throughout, their punctures more evident than in the allied species, the interstices slightly shining, nearly flat at base, convex towards the apex, the first and succeeding alternate interstices with a single scattered series of setæ, shorter and finer than in *P. reitteri*. Flanks of the prothorax and underside fuscous-black; the abdomen rufescent; legs pale testaceous.

Hab. GUATEMALA, near the city, San Gerónimo (*Champion*).

I have seen sixteen specimens. It is hardly possible to give precise differential characters to separate this species from *P. reitteri*. It is smaller and narrower, with the elytra nearly parallel-sided to the middle, usually lighter in colour, and less opaque, with the punctures of the striæ evident and the setæ finer.

Group **HEXACOLIDES.**

Head at most with very slight indication of a rostrum, not deeply sunk in the prothorax, sometimes with the vertex visible from above; eyes entire, oblong or oblong-oval. Antennal funiculus 6-jointed, the club small or moderate in size, flattened, triarticulate, with transverse or slightly curved sutures, their margins not fringed (in *Microborus* the club is obliquely compressed and subtunicate). Prothorax not, or not strongly, declivous in front, usually uniformly and gently convex from base to apex, with a well-defined side-margin and usually a basal margin; its dorsum smooth and simply punctured, or very feebly asperate towards the apex. Elytra not elevated or granulate at the base, but sometimes with a well-defined basal margin, their apical extremity smooth, declivous, and convex, without impressions or armature. Fore and middle coxæ more or less widely separated; the mesosternum rather prominent, with a free edge; third and fourth abdominal segments each little shorter than the second, the anal opening terminal. Superior border of the tibiæ serrate, straight in the anterior pair, which are subtruncate, with one or two strong teeth before the apex, curved in the remaining pairs. Tarsi simple, the first joint as short as or shorter than the second.

The characters given above, though not at first sight specially striking, are nevertheless such as to make it difficult to include with propriety the species exhibiting them either in the Hylesinides or the Tomicides, and sufficiently indicate the limits of what appears to be a logical and natural assemblage. The existence of six joints in the antennal funiculus is, in the Tomicides, an extremely rare occurrence, and together with the laterally-margined and feebly declivous prothorax will readily distinguish the components of the present group, many of which have a marked likeness to species of Cioidæ. In *Epomadius* alone the lateral margin of the prothorax is indistinct, its place being taken by a singular structure which I have not met with elsewhere in Scolytidæ. The extent to which the head is concealed by the

prothorax when viewed from above varies, and is scarcely available by itself as a diagnostic character; in one or two species, e. g. *Hexacolus glaber*, the head is as much covered as in the majority of Tomicides. A reliance upon this, the character usually employed to differentiate between the Hylesinid and Tomicid groups, has led to the few described genera of Hexacolides being referred by their authors to very diverse positions. While *Pycnarthrum* and *Hexacolus* have been described by Eichhoff as Tomicides, the former was placed by Chapuis in the Hylesinides under the name *Nemobius*. On the other hand, Ferrari described a species of *Pycnarthrum* doubtfully as a *Hypoborus* (*H.? hispidus*), but he rightly regarded his own genus, *Scolytodes*, which is scarcely distinct from *Hexacolus*, as intermediate between the Tomicides and the groups with an exserted head. By Chapuis *Scolytodes* was made the type of a "sub-tribe," next to the Camptoceri, under the name *Ctenophorus*.

The Hexacolides thus form a group not far removed from the Tomicides, and it may be argued that they are as appropriately included in that somewhat heterogeneous assemblage as are genera like *Crypturgus* and *Aphanarthrum*. This must remain a matter for individual opinion; but it cannot be denied that, with the possible exception of *Microborus*, a small and peculiar form of *Crypturgus*-like appearance, the genera here associated are of close relationship. The species are confined to and apparently common in the Neotropical region, the few forms described here being no index to the number of those existing without names in collections.

The Central-American species received by us are divisible into five genera, which may be distinguished as follows:—

Eyes approximate on the gular surface; anterior femora very large, much longer than the others.
  Eyes approximate on the front; sides of the prothorax sinuate about the middle; body subglabrous . . . . . *Microborus*.
  Eyes not approximate on the front; sides of the prothorax not sinuate; body pilose or squamose . . . . . *Pycnarthrum*.
Eyes remote below, not extending on to the gular surface; anterior femora not very large, about equal in length to the others.
  Tibiæ broadly dilated towards the apex, strongly serrate above; prosternal process transverse . . . . . *Prionosceles*.
  Tibiæ not broadly dilated towards the apex, finely serrate above; prosternal process not transverse.
    Side-margin of the prothorax well defined; tarsi slender . . . . . *Hexacolus*.
    Side-margin of the prothorax nearly obsolete behind, replaced towards the apex by a large pubescent impression; first three tarsal joints vertically compressed . . . . . *Epomadius*.

MICROBORUS, gen. nov.

Caput exsertum, parum rostratum. Oculi permagni, supra et infra approximati, grosse granulati. Antennæ breves, clava depressa, subtunicata, apice oblique truncato, suturis concentricis notato. Prothorax subcylindricus, lateraliter sinuatus, inde medio quasi subangustatus. Tarsorum articuli 3 primi breves, æquales.

Head free, indistinctly rostrate. Eyes very large, formed each of five rows of very coarse granules, approximate above and below the head, the inferior interocular space the narrower. Antennæ very short, the scape curved, joints 2–6 of the funiculus not increasing in width; club orbicular, somewhat flattened obliquely, the sutures extending more towards the apex on the inner than on the outer face, so that the club viewed from the side appears to be subtunicate, and approaches that of *Xyleborus*. Prothorax slightly constricted about the middle, the sides therefore appearing sinuate, their margins weak. Anterior coxæ remote from each other and from the front prosternal border. Tibiæ not strongly dilated, their upper border serrate; the anterior pair obliquely excised at the apex and uncinate at the inferior angle. The three basal tarsal joints short, equal and simple.

This genus is established for a single curious little species which resembles a *Crypturgus*. Its position must, to some extent, be regarded as doubtful, for but one example has reached us, and it is difficult to make out structural details in so small an insect. The structure of the antennal club separates it from the remaining genera of the group; although it has been as carefully examined as circumstances permit, it can only be fully elucidated after mounting in balsam.

1. **Microborus boops**, sp. n. (Tab. VII. fig. 1.)

longatus, subdepressus, ferrugineo-testaceus, capite et prothoracis disco nigricantibus; prothorace oblongo, punctato, linea media lævi; elytris punctato-striatis, striis postice profundioribus, interstitiis convexis in declivitate breviter seriatim setosis.

Long. 1·6 millim.

Elongate, rather depressed, reddish-testaceous, the head and dorsum of the prothorax (except the anterior and posterior borders) blackish. Head finely reticulate, sparingly punctured and pubescent; mouth reddish, fringed; antennæ testaceous-yellow. Prothorax a third longer than broad, the hind angles rounded and margined, the sides sinuate, the apical margin rounded; surface glabrous, gently convex from base to apex, very finely reticulate, and with distinct punctures sparse towards the middle of the sides and absent over the median line. Scutellum small, rounded, and not impressed. Elytra a little wider than the prothorax and one-half longer, truncate at the base with the shoulders rounded-rectangular, parallel-sided, subcircularly rounded at the apex; surface subcylindrical to the hinder third, thence convex, punctate-striate, the striæ rather shallow at the base, deeper behind, the interstices somewhat convex, delicately rugulose, with single rows of minute punctures, carrying short setæ on the declivity. Underside and legs reddish-testaceous; the former thinly pubescent.

Hab. GUATEMALA, Tamahu in Vera Paz (*Champion*).

One example. The large size and extremely coarse granulation of the eyes are quite without parallel in the smaller species of Scolytidæ.

PYCNARTHRUM.

Nemobius, Chapuis, Syn. Scol. p. 41 (1869) (Mém. Soc. Liége, 1873, p. 249) (nomen præocc.).
Pycnarthrum, Eichhoff, Rat. Tom. p. 104 (1878).

In *Pycnarthrum* the head is feebly rostrate and but little covered by the front of the

prothorax, being visible from above. The eyes are large, but not contiguous above; below they extend along the buccal borders, and are narrowly separated on the gular space. The antennal funiculus is 6-jointed as in the other Hexacolides, and not 5-jointed as described by Chapuis; the club is crossed by two slightly oblique sutures, the basal one being strongly chitinized towards its outer part as in *Phlœosinus*. The maxillary lobe is narrow, the palpi have the first two joints strongly transverse, the third as long as broad. The mentum is oblong, narrowed and incurved at the base, the ligula is attached about its middle, and is narrow and pointed; the labial palpi are moderately long, the joints somewhat inflated, scarcely transverse and not hairy.

The prothorax is uniformly and gently convex above, entirely devoid of asperities, and narrower than the elytra, which are slightly rounded but not margined at the base. The anterior femora are long and dilated; the middle and hind pairs are narrow.

The species are small, oblong insects, covered with scales and hairs, distributed thinly on the prothorax, which is margined with outstanding scales, and more closely on the elytra, which possess rows, sometimes irregularly biseriate, of conspicuous interstitial scales. The large outwardly projecting fore-femora are also characteristic of these insects.

The genus is one of the hardest of all Scolytid genera to study. The differences between the species, of which there appear to be several, consist merely of slight modifications in shape, colour, vestiture, and depth of punctuation; and, in the absence of more exact differential characters, the task of delimitation appears to be quite hopeless, except by an exhaustive comparison of long series in good condition.

Chapuis has described two species from Mexico and Guadeloupe respectively, Ferrari one from Cuba, C. O. Waterhouse one from Fernando Noronha. Eichhoff has also described a couple, one at least of which is synonymous with one of Chapuis's. The genus appears to be generally distributed over Tropical America and the Antilles.

1. **Pycnarthrum lambottei.** (Tab. VII. figg. 2, antenna; 2 *a*, fore-leg.)

Nemobius lambottei, Chap. Syn. Scol. p. 42 [1] (Mém. Soc. Liége, 1873, p. 250).
Pycnarthrum quadraticolle, Eichh. Rat. Tom. p. 106 [2].

Hab. Mexico [2], Teapa [1], Orizaba and Cuernavaca (*Bilimek*); Guatemala, San Juan in Vera Paz, San Gerónimo, Zapote (*Champion*).

This species is somewhat variable, the examples from San Gerónimo being larger and finer than those from Mexico. The prothorax is about as long as broad, parallel-sided for the hinder two-thirds, incurved in front; the interspaces between the covering of scales are shining. The elytra are about two-thirds longer than the prothorax, with subimpressed rows of very large deep punctures, varying in number in different specimens; the scales are yellowish-grey, the prominent series on the interstices occurring, for the most part, in very irregular double rows, except on the declivity.

The front is flattened and sometimes subfoveolate in the male, subconvex in the female. The length varies from 1·8 to 2 millim.

Neither of the type specimens is mature, and they differ *inter se* in the depth of the elytral punctures; but both forms are represented and are connected by intermediate examples in our series from Zapote.

2. **Pycnarthrum transversum,** sp. n.

Oblongo-ovatum, parum nitidum, piceum, elytris ad apicem dilutioribus, cinereo-squamulatum; prothorace transverso, antice constricto, subtiliter punctulato et parce squamoso; elytris a medio rotundatis, subtiliter punctato-striatis, interstitiis seriato-squamosis.

Long. 2 millim.

Differing from *P. lambottei* in the following points:—Prothorax much wider, distinctly transverse, with the anterior angles much more strongly rounded; interspaces between the punctures with an evident very fine reticulation. Elytra broader, only one-sixth longer than wide, punctures of the striæ fine and not the large circular impressions found in the preceding species. Squamous pubescence a little coarser.

Hab. GUATEMALA, Mirandilla (*Champion*).

Four specimens of this species were taken by Mr. Champion. Though closely allied to *P. lambottei*, it is not approached in shape by any examples of that species, and cannot be associated with it.

Two more species of *Pycnarthrum* are represented in this collection by single examples from Zapote in Guatemala, and Chontales in Nicaragua. Both are immature and therefore unsuitable for description. *P. pallidum* (Chap.) from Guadeloupe is also immature, and the type is practically valueless. The insects collected from Mexican and Brazilian tobacco, and forwarded to me by M. A. Grouvelle, include several examples of different species of *Pycnarthrum*.

PRIONOSCELES, gen. nov.

Prothorax basi distincte marginatus, quam elytra vix angustior. Coxæ anticæ et mediæ late distantes. Abdominis segmenta 3^{m} et 4^{m} brevia. Pedes longi; tibiæ validæ, versus apicem fortiter dilatatæ, extus serratæ, mediæ et posteriores ad apicem rotundatæ; tarsi recepti.

Form stout and robust. Head somewhat prolonged but scarcely rostrate, mandibles large and prominent; mentum a little longer than broad, wider apically; labial palpi with joints 1 and 2 as long as broad, 3 shorter, their outer surface densely setose; maxillary lobe narrow, set internally with close flattened spines; maxillary palpi with joints equal in length, successively narrower, the 3rd twice as long as broad. Antennæ not very short, joints 2-6 of the funiculus increasing moderately in length, not strongly transverse; club oblong-obovate, with two curved sutures. Bases of the prothorax and elytra evidently margined. Anterior coxæ separated by a strongly transverse prosternal process; tibiæ broadly dilated at apex, the superior margin serrate with strong teeth; anterior pair with the last two teeth prominent and separated by a rather deep recess, middle and posterior pairs rounded at apex. Tarsi rather long and slender, received into grooves on the inner face of the tibiæ.

Two species from Central America are referred to this genus, which is sufficiently distinct in the structure of the legs. I have seen a third from Brazil.

1. **Prionosceles atratus,** sp. n. (Tab. VII. fig. 3.)

Oblongo-ovalis, nitidus, ater, antennis tarsisque rufescentibus; prothorace latitudine sublongiore, dorso subdeplanato, sat fortiter punctato, linea media sublævi; elytris ad apicem obtuse rotundatis, superne punctato-striatis, stria suturali fortiter impressa, interstitiis irregulariter punctatis, post medium tuberculis piliferis ornatis.

Long. ♂, 3·3 millim.; ♀, 2·6–3·4 millim.

Mas. Fronte supra os impressa, pilosa; prothoracis antica parte confertius subrugose punctata.

Fem. Fronte parum convexa, nonnunquam supra os irregulariter subnodosa, subglabra; prothoracis antica parte subtilissime asperata.

Oblong-oval, shining, subglabrous, deep black. Head (♂) with a shallow oval closely punctured and pilose fovea over the mouth, vertex convex, shining, with rather close strong punctures; head (♀) little convex in front, with an indistinctly elevated median line, strongly punctured and subglabrous, sometimes tumid and subnodose over the mouth: epistoma with a conspicuous median tuft of light hairs; antennæ ferruginous, club infuscate, pubescent, with indistinct sutures. Prothorax as long as wide, the base strongly bisinuate and margined, the margin continued along the subrectangular hind angles to the sides, which are subparallel to before the middle, then obliquely narrowed and slightly incurved to the obtusely rounded apical margin; disc gently convex from side to side, somewhat flatter in the middle, obliquely declivous in front, entirely glabrous, shining, with moderate regular punctuation, the median line impunctate, variable, sometimes subelevated in the middle, apical third (♂) more closely furnished with slightly muricate punctures, (♀) finely asperate with small elevated granules. Scutellum rather large, transverse, shining. Elytra one-half longer than the prothorax, their basal borders sinuate, with a narrow raised margin, the humeral angles margined, the sides nearly straight, subampliated behind, then broadly rounded at the apex; surface moderately convex from base to middle, thence declivous and more strongly convex, flattened along the suture, punctate-striate, with the sutural stria deeply impressed, the punctures confluent; interstices nearly flat, finely and irregularly punctured behind the middle with a single series each of minute tubercles bearing short semierect hairs. Underside black, pubescent; legs piceous, the tibiæ and tarsi partly rufescent.

Hab. GUATEMALA, Cerro Zunil, Senahu in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Seven examples. The single specimen taken in Panama is a good deal smaller than the others, with the elytral striæ more deeply impressed towards the sides. It does not differ in other respects.

2. **Prionosceles maurus,** sp. n.

Ovalis, convexus, sat nitidus, niger, antennis et pedibus piceo-ferrugineis: *P. atrato* similis, sed compluries minor, pro portione latior; prothorace transverso, elytris multo subtilius striatis vel lineato-punctatis, stria suturali haud profundius impressa distinguendus.

Long. 1·7–2 millim.

Closely like *P. atratus*, but very much smaller, more broadly ovate, and convex. Head (♀) more finely punctured in front, not elevated over the mouth. Prothorax transverse, the sides incurved almost from the base to the apex; disc with distinctly closer punctuation, and therefore less shining, with a narrow subelevated median line. Elytra with the rows of punctures not or scarcely impressed, the sutural row not deeper; interstices quite flat, confusedly punctured, with a single series each of more conspicuous pale hairs beginning almost at the base. Legs more reddish, the tibial armature weaker.

Hab. GUATEMALA, Cerro Zunil, Pantaleon (*Champion*).

Three examples, apparently all females. This species can hardly be regarded at present as a mere variety of *P. atratus*, for although that insect differs somewhat in

size, there is not in the smaller examples any tendency towards that obsolescence of the striæ which is characteristic of *P. maurus*.

EPOMADIUS, gen. nov.

Caput subrostratum; antennarum funiculus sat longus, articulis 3°–6ᵐ transversis, latitudine crescentibus, clava ovata. Prothorax elytris angustior, basi submarginatus, anterius supra subasperatus; carina lateralis utraque obsolescens et plaga magna depressa pube densa vestita antice terminata. Coxæ anticæ et intermediæ sat late distantes. Tibiæ lineares supra spinulis 2 aut 3 serratæ; tarsi breves, articulo 1° sequenti breviore, 2° et 3° lateraliter compressis.

Head subrostrate; antennæ moderately long, joints 3–6 of the funiculus distinctly transverse, the club oval, with two slightly curved sutures. Prothorax not margined at the base, the lateral margins almost obsolete and replaced on the anterior half of the sides by a large shallow depression, covered with short curled hairs. Elytra much wider than the prothorax. Anterior and middle coxæ moderately remote. Tibiæ linear, the anterior pair with the superior border simple, and with one or two backwardly directed spines above, and one beneath the tarsal articulation; superior border of the middle and posterior tibiæ rounded at apex, with three or four spines. First tarsal joint short, the second and third laterally compressed. Abdominal segments 2, 3, 4 nearly equal.

The genus is constructed for one singular-looking species, remarkable for the pilose impression at each side of the prothorax. The anterior tibiæ appear in certain aspects to be entirely unarmed, and the exact relation of the two or three short spines to the articular cavity and apex of the tibia is extremely hard to make out.

1. **Epomadius culcitatus,** sp. n. (Tab. VII. fig. 4.)

Oblongus, subnitidus, ferrugineus, capite nigricante, pube tenui flava appressa pilosus; prothoracis lateribus utrinque plaga impressa flavo-pilosa ornatis, dorso antice granulis posterius rarioribus instructo, postice punctato; elytris striato-punctatis, interstitiis planis confuse punctatis.

Long. 2·5 millim.

Oblong, slightly shining, ferruginous-brown, with thin short decumbent yellowish pubescence. Head blackish, front subconvex, subglabrous, shining, finely and sparingly punctured, with a median subelevated line towards the vertex, epistoma produced over the mandibles; antennæ testaceous-brown, the club infuscate, shining, the apical joint and sutures pubescent, the basal suture transverse, the second curved. Prothorax as long as wide, subtruncate at base, the hind margin shining but not elevated, the posterior angles oblique, margined, the sides posteriorly straight, with a nearly obsolete lateral margin which divides about the middle, to enclose a large shallow impression towards the front of each flank, set with thick, short, upstanding, curved yellow hairs, apex broadly rounded; disc moderately convex, obliquely declivous from the middle to the apex, thinly pubescent, set with small granulations, closer and stronger in front, becoming more remote and feeble behind the middle and replaced by punctures towards the base, median line shining, elevated from the base to the middle. Scutellum small, rounded. Elytra wider than the prothorax and more than one-half longer, exactly truncate at base, the shoulders rectangular, the sides straight and subdivergent, incurved obliquely behind the middle and converging to the apex, which is more obtuse in the middle; surface subcylindrical at the base, obliquely and convexly declivous behind, flatter along the suture than at the sides, with thin short decumbent pubescence, finely striate-punctate, the striæ scarcely impressed, the sutural stria not deeper, interstices multipunctate, the punctures not weaker than those of the striæ. Underside brown with fine pubescence.

Hab. Panama, Peña Blanca (*Champion*).

Two examples. The hairs arising from the curious shallow impression on each flank

of the prothorax give the insect the appearance of possessing a thick callosity on each side, but the surfaces from which they spring are depressed and not elevated. The specimens show no sexual differences.

HEXACOLUS.

Hexacolus, Eichhoff, Berl. ent. Zeitschr. 1867, p. 399; Rat. Tom. p. 306.

In this genus are included several species which vary amongst themselves in shape and in various minor points, but which agree on the whole with the type-species, *H. glaber*, Eichh. They differ from *Prionosceles* in the possession of comparatively narrow and non-dilated tibiæ, the armature of which is much more feeble; the anterior pair have two well-marked curved spines at the apex. The prosternal process is not broader than long; the 3rd and 4th abdominal segments are less short. The joints of the antennal funiculus appear to be somewhat variable in proportion in the different species, and the club varies in shape and the arrangement of the sutures, but these points are very difficult to ascertain exactly unless the antenna is mounted in balsam. The prothorax is little or not at all narrower than the elytra, and is bordered at the base in *H. glaber*, but not distinctly so in the smaller Central-American species; the lateral margin is, however, well marked, and the sides are without trace of the depression found in *Epomadius*.

It is possible that *Bostrichus lævigatus* of Dejean's catalogue, which has been made the type of two genera, *Scolytodes*, Ferr., and *Ctenophorus*, Chap., may have eventually to be referred to this genus. It differs in the relatively narrow prothorax, which is scarcely declivous in front and is devoid of all asperate punctures, and in the extremely fine teeth of the middle and posterior tibiæ, which are not visible without powerful amplification. According to Chapuis, the fifth joint of the funiculus is smaller than the fourth or sixth; I cannot make out this in his or Ferrari's type-specimens. The difference in size, if existent, is very slight and probably quite unimportant.

The number of species of *Hexacolus* occurring in Tropical America and the Antilles is evidently large, and when more have been studied it will be appropriate to decide whether further subdivision of the genus is necessary.

The four species from Central America may be thus distinguished:—

1.	Prothorax and elytra pubescent, the former evidently the narrower . .	*setosus,* sp. n.
	Prothorax and elytra entirely glabrous, about equal in width	2.
2.	Form oblong; testaceous with the apex of the prothorax and suture of the elytra black	*melanocephalus,* sp. n.
	Form subelongate; unicolorous or with the disc of the prothorax lighter in the middle, last abdominal segment with two setæ	3.
3.	Base of the prothorax punctured, elytra with impressed striæ	*unipunctatus,* sp. n.
	Base of the prothorax impunctate, elytra with rows of very fine punctures.	*piceus,* sp. n.

1. **Hexacolus setosus,** sp. n.

Oblongus, subnitidus, breviter pilosus, brunneo-testaceus, capite, prothoracis plaga apicali, elytrorum lateribus nigricantibus, subtus fusco-niger, antennis (clava excepta), coxis, pedibus brunneo-testaceis; prothorace transverso, dorso subæqualiter convexo, antice rugulis subasperatis, postice punctis ornato; elytris striato-punctatis, punctis brevissime setosis, interstitiis setis longioribus erectis exstructis.

Long. 1·8 millim.

Oblong, slightly shining, covered with short cinereous hairs. Head fuscous-black, scarcely convex in front, with rather long sparse pubescence, scantily and irregularly punctured and impressed over the mouth; antennæ testaceous-brown, the club infuscate, compressed oval, with slightly curved sutures. Prothorax distinctly broader than long, the base very finely margined throughout, the sides finely margined and subparallel behind the middle, rounded in front, the apex somewhat more obtuse; disc uniformly convex from base to apex, testaceous-brown, with a fuscous apical patch, not reaching the margins and extending to the middle, thinly pilose with short decumbent hairs, with moderately strong and close punctuation, sparser towards the middle, the apex not asperate, the interspaces closely reticulate. Elytra a little wider than the prothorax and nearly twice as long, subtruncate at base with the borders narrowly elevated, the sides parallel to the hinder third, then subcircularly rounded; surface convexly declivous behind the middle, brown-testaceous with the sides infuscate, finely punctured in feebly impressed rows, the punctures bearing minute decumbent hairs, interstices flat, with a single series each of erect slender setæ. Underside, behind the prothorax, entirely black, scantily hairy; legs testaceous-brown.

Hab. Guatemala, Cerro Zunil (*Champion*).

One specimen. The basal margins of the prothorax and elytra are feeble, but are distinct with proper illumination.

2. **Hexacolus melanocephalus,** sp. n. (Tab. VII. fig. 5.)

Oblongus, glaber, subnitidus, supra brunneo-testaceus, capite, prothoracis plaga apicali, elytrorum sutura nigricantibus, subtus totus testaceus, vel fusco-niger, abdomine ultimo, coxis, pedibus brunneo-testaceis; prothorace sat convexo, apice rotundato, declivi, anterius rugulis transversis subtilibus asperato, posterius sat dense punctato; elytris lineato-punctatis, interstitiis planis vix subtilius seriato-punctatis, apice oblique convexe declivi.

Long. 1·8–2 millim.

Mas. Longior, subangustior, fronte impressa, pilosa; prothoracis antica parte subtilius rugulosa.

Fem. Fronte convexiuscula, subglabra.

Oblong, slightly shining, glabrous above. Head black, front (♂) impressed, rather thinly pubescent, the marginal hairs longer, closer, and directed forwards, the fundus longitudinally subcarinate; front (♀) subconvex, punctured, subglabrous, finely reticulate: mouth rufescent, fringed; antennæ short, scape and funiculus testaceous-brown, the latter with joints 2–6 very transverse, the club infuscate, subcompressed oval, thinly pubescent, the basal suture alone evident, curved. Prothorax about as long as broad, its base transverse, scarcely bisinuate, margined towards the rectangular hind angles, parallel-sided to before the middle with a fine lateral margin, thence narrowed and rounded to the apex; disc moderately and uniformly convex, testaceous-brown with a fuscous-black patch in front, extending back to the posterior third but not attaining the margins, and indistinctly bipartite in immature specimens, very finely asperate before the middle with small transverse rugæ, obsolescent in the male, posteriorly with close and moderately strong punctuation, the interspaces finely reticulate. Scutellum rounded triangular, infuscate. Elytra a little wider at their widest point than the prothorax and one-half longer (♀), subtransverse and not margined at base, the humeral angles obtuse, the sides at first subampliated, then becoming nearly straight to the hinder third, thence gradually rounded to the apex, more obliquely in the male, in which the elytra are relatively a little longer; surface subconvex to the middle, thence convexly declivous, brown-testaceous, with the margins of the suture narrowly infuscate, glabrous, closely punctured in rows,

the interstices with single rows of scarcely finer punctures. Underside fuscous-black with the last three abdominal segments testaceous, sometimes entirely testaceous, subglabrous. Legs testaceous-brown.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

Three examples. I have seen others from tobacco-refuse. This species most nearly approaches *H. glaber* of those herein described. Two allied forms, from Teapa in Mexico, and Capetillo in Guatemala, are represented by single examples in bad condition, and are left undescribed.

3. **Hexacolus unipunctatus,** sp. n.

Subelongatus, nitidus, supra glaber, niger, ore, prothoracis macula discoidali (quæ rarius deest), antennis, pedibus rufescentibus; prothorace latitudine sublongiore, sparsim punctato et versus apicem tenuiter rugato; elytris punctato-striatis, striis postice profundioribus, interstitiis subconvexis, seriato-punctatis, alternis in declivitate obliqua subelevatis.

Long. 2 millim.

Mas. Fronte subimpressa, supra os pallescente, plaga media subelevata infuscata; antennarum scapo ciliato.

Fem. Fronte subconvexa, præter os transverse impressa, vix pallidiore; antennarum scapo haud ciliato.

Rather elongate, glabrous above, black, the prothorax usually with an obscure reddish spot. Front (♂) longitudinally impressed, granulate-punctate, becoming pale testaceous over the mouth beneath a median pyriform shining piceous-black elevation, pubescence scanty, villous; front (♀) subconvex, subglabrous, with stronger scattered punctuation, transversely impressed and indistinctly paler over the mouth, with no median elevation: the darker parts with a bluish opalescence in both sexes. Antennæ testaceous-brown, the scape straight, in the male with a fringe of cilia on the inner border increasing in length apically, funiculus short, joints 2–6 transverse, almost perfoliate, increasing in width, club infuscate, rather small, oval, subcompressed. Prothorax a little longer than broad, its basal margin bisinuate, bordered towards the rounded and margined hind angles, the sides slightly curved and narrowed anteriorly, margined, apical angles rounded, the anterior border obtuse; surface somewhat flattened in the middle, obliquely and not strongly declivous in front, with an indistinct and variable longitudinal subelevated line before the lozenge-shaped discoidal spot, which is rarely absent, its anterior third subasperate with very fine elevated rugæ, the rest rather dull, finely and diffusely punctured, the punctures stronger and closer towards the base, interspaces delicately and closely reticulate. Scutellum rounded, shining. Elytra as wide as the prothorax and one-half longer, the basal margins separately curved, humeral angles callous and subrectangular, sides straight to the middle, thence rounded in an oblique curve to the apex; surface gradually and obliquely declivous behind the middle, shining, glabrous, with rather strong punctured striæ deeper posteriorly, interstices narrow, feebly convex, each with an irregular row of minute punctures, the 1st and succeeding alternate interstices more distinctly convex towards the apex. Underside black, shining, glabrous, the abdominal segments separately convex from before backwards, the fifth with two setæ at apex; legs piceous.

Hab. GUATEMALA, Cubilguitz in Vera Paz (*Champion*).

Seventeen specimens. The bluish opalescence of the forehead resembles that which exists in *Cnesinus teres* (p. 141); these form the only instances I have seen in the Scolytidæ of an approach to metallic coloration, with the well-known exception of *Camptocerus æneipennis* (Fabr.). The sexes have been determined by dissection. The apical setæ of the last ventral segment exist in both sexes; they are also present in the following species, and may possibly prove of importance as a character on which to subdivide the genus.

4. **Hexacolus piceus,** sp. n.

Subelongatus, glaber, nitidus, piceus, prothorace haud transverso, antice subtilissime ruguloso; elytris lineato-punctatis, linea suturali vix impressa, interstitiis paullo subtilius uniseriatim punctatis.

Long. 1·8 millim.

Mas. Fronte media pilis applicatis fulvis ornata.

Fem. Fronte glabra.

Rather elongate, glabrous, shining, piceous or piceous-brown, the head and an apical spot on the prothorax black. Front (♂) covered with close-lying fulvous hairs; front (♀) convex, glabrous, shining and subimpunctate; antennæ fuscous, the base of the scape lighter, club short-oval. Prothorax as long as broad, the sides gradually and uniformly rounded from behind the middle to the apex, hind angles subrectangular, base truncate, impressed on either side and margined towards the hind angles; disc almost uniformly subconvex, obliquely declivous in front, its anterior third subasperate with very fine transverse rugosities, hinder part with microscopic scattered punctures, the interspaces closely reticulate. Scutellum small, rounded triangular. Elytra a little wider at base than the prothorax, and nearly twice as long, their basal borders subtruncate and not margined, the sides parallel to the middle, thence obliquely rounded to the apex; surface lineato-punctate, the sutural stria alone impressed towards the base, interstices narrow with a single series of finer but as frequent punctures, declivity convex, shining, more finely punctate. Underside shining, subglabrous.

Hab. Panama, Volcan de Chiriqui (*Champion*).

A pair. In structural characters which are not sexual this species agrees with *H. unipunctatus*.

Group **TOMICIDES.**

This group is here regarded as the equivalent, so far as the Central-American forms are concerned, of the Tomicini of Eichhoff's 'Ratio Tomicinorum,' after the omission of the genera *Problechilus*, *Pycnarthrum*, and *Hexacolus*. As is the case with the Hylesinides, its constituent species are readily distributed by their structural differences into genera; but to arrange these genera into subgroups by a synthetic disposition of their characters is by no means easy.

Two such arrangements, by Leconte and Eichhoff respectively, deserve notice. In his 'Rhynchophora of America north of Mexico,' the former writer has given an excellent account of the tolerably representative genera of that region, drawn up with his usual close attention to structural details; his scheme, however, appears to be scarcely natural, owing to the excessive use made of the antennal club as the structure by the variations of which the subgroups are defined. Thus, while *Pityophthorus*, with which is included *Gnathotrichus*, and *Hypothenemus* are put into one subgroup with the very distinct *Corthylus* and *Pterocyclon* (*Monarthrum*), *Cryphalus*, which is often regarded as not even distinct from *Hypothenemus*, is positively relegated to the company of *Xyleborus* and *Dryocœtes*. The club affords excellent characters of a kind, but their value requires much controlling by a concomitant use of the other structural features.

The classification, on the other hand, proposed in Eichhoff's monograph is more natural in its grouping, with the limits of which I am disposed to agree, except

on a few points, such as the association of *Xyleborus* and *Gnathotrichus*, and the unnecessary separation of the Amphicranid from the Corthylid genera. Eichhoff's subgroups, or, as he calls them, subfamilies, are somewhat vaguely defined, and are arranged by him in two main sections, Phlœophagi (*op. cit.* p. 72) and Xylophagi (*op. cit.* p. 308). Apart from the bark or wood-boring habits which the names indicate, the components of each section are to be distinguished by the structure of the maxillæ, which in the first-named are set internally with stout radiating spines and have the apical joint of the palpus non-striate, and in the second are set with slender setæ, closer apically, and have the apical joint of the palpus striate. In the Xylophagi the sutural stria of the elytra is weakly impressed or absent.

Leconte and Horn justly point out (Class. Col. N. Am. p. 517) that these oral characters are very difficult to observe and verify. To do so exacts, indeed, the laborious and troublesome operation of dissecting out the maxillæ and mounting them in balsam. When this is done, the distinctions are found to be real and important, if not quite so decisive as Eichhoff supposed; the striation of the palpus at least is little evident to me except in the Corthyli, where it is very marked. It is reasonable to suppose that the structure of the buccal organs is adaptive and correlated with the assumption of wood-boring habits; and it may be inferred that these habits have been independently acquired by various Tomicid forms. This possibility will scarcely be contested by anyone who is familiar with the variations existing in the boring-habits of Scolytidæ. But if such be the case, the modifications in maxillary structure will be of secondary and subordinate value, and not a feature on which to base the primary division of the group.

In the following table the group of Central-American Tomicides is divided according to the subgroups established by Eichhoff, except when the association seems to be incorrect.

Thus *Gnathotrichus*, which appears to stand midway between *Pityophthorus* and the Corthyli, is placed with the Pityophthori, following Leconte, rather than with the Xylebori, and the Corthyli and Amphicrani are brought together under the former name.

The order in which these subgroups are diagnosed and will be described is approximately that employed by Leconte, and brings together the Pityophthori and Corthyli. It has the disadvantage, however, of separating the former from the Tomici, which approach them very closely, the distinctions between these two subgroups being in many cases slight and of doubtful value.

Club tunicate or subtunicate, obliquely truncate, the upper surface principally corneous, the lower surface, to which the sutures are mainly limited, spongy at the tip. Tibiæ stout, more or less strongly serrate; at least the anterior tarsi retractile.

Club subtunicate, its sutures not concentric on the outer face. Maxillary armature spinose. Elytra impressed and toothed at apex, sutural stria impressed. Sexes not markedly dissimilar. Species phlœophagous . . . *Tomici.*

Club tunicate, its sutures concentric on the outer face. Maxillary armature setose. Sutural stria feeble. Middle and posterior tarsi retractile. Males dwarfed and subapterous. Species wood-boring . . . . . *Xylebori.*

Club with transverse or curved sutures, subequal on both faces. Tibiæ slender, not coarsely serrate; tarsi not retractile.

Funiculus with six joints.

Prothorax oblong, its anterior opening very oblique. Body subelongate, the elytra mucronate at apex . . . . . *Hylocuri.*

Funiculus with four or five joints *, outer face of the tibiæ not tuberculate.

Prothorax subhemispherical. Body not elongate, usually with close-lying hairs or scales. Elytra not sulcate at apex . . . . . *Cryphali.*

Prothorax oblong, with oblique opening. Body subelongate, rarely pilose or squamose. Elytra usually with an apical sulcus. Anal aperture sometimes ventral . . . . . *Pityophthori.*

Funiculus very short, with one to three joints; anterior tibiæ subprismatic, the outer surface porcate or with a row of tubercles external to the dentate margin.

Head deeply retracted, sometimes entirely concealed except from below. Elytra with no general pilosity, smooth, with extremely fine, rarely moderate punctuation, non-striate, except sometimes along the suture. Anal aperture ventral. Species wood-boring . . . . . *Corthyli.*

Subgroup I. TOMICI.

Tomicidæ, Eichhoff, Rat. Tom. p. 210.

The Tomici inosculate with the Pityophthori through *Pityogenes*, a genus not found in our region, and with the Xylebori through *Dryocœtes*. Three genera are found in Central America:—

Tibiæ subtriangular, truncate at apex; middle and hind tarsi not retractile. Prothorax declivous and asperate in front, behind punctate.

Mentum very elongate, slipper-shaped, constricted behind the middle; ligula inserted about the middle, for its full width. Club with the sutures angulate, sinuate, or transverse (subcircular in *T. concinnus* alone). Elytra excavate or retuse, multidentate. Species living on Coniferæ . . . . . *Tomicus.*

Mentum not very elongate, parallel-sided, narrowed at the base; ligula very small, inserted narrowly at the apex. Sutures of the club concentric. Elytra with at most one or two teeth each. Species not living on Coniferæ. *Xylocleptes.*

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* Examples of small species of *Hypothenemus* appear (? occasionally) to possess a three-jointed funiculus. This feature of depauperization is of no systematic importance.

Tibiæ compressed, their upper margin rounded throughout; all tarsi retractile.
Prothorax uniformly convex, posteriorly granulate or subgranulate . . . . *Dryocœtes*.

TOMICUS.

Ips, De Geer, Mém. Ins. v. p. 190 (1775); Marsham, Ent. Brit. Col. p. 51 (nec Fabr., Er.).
Bostrichus, Fabricius, Syst. Ent. p. 59 (1777); Erichson, Wiegm. Arch. ii. 1, p. 62 (nec Geoffroy, 1762).
Tomicus, Latreille, Gen. Crust. et Ins. ii. p. 276 (1807) [nec Hist. Nat. Crust. et Ins. iii. p. 203 (1802)]; Lacordaire, Gen. Col. ix. p. 382; Eichhoff, Rat. Tom. p. 220.

The synonymy of this genus is of the most confusing character, but it cannot be denied that the name *Ips* which was applied to it by De Geer in 1775, with *Dermestes sexdentatus*, Boern. (=*Ips typographus*, De Geer), as type, is the name to be employed if the law of priority be strictly observed. *Ips* was subsequently used for a genus of Nitidulidæ by Fabricius in the 'Genera Insectorum,' a work of uncertain date, but not issued earlier than 1776, a year after De Geer's publication. Fabricius also brought the name *Bostrichus*, which he had misappropriated from Geoffroy, into use for these Scolytids; and this name, being employed by Erichson and Ratzeburg, has obtained a somewhat wide currency among German writers, particularly on forest entomology.

Tomicus, an excellent and characteristic name, is not only much later than *Ips* but was first employed in 1802 for a genus having as type "*Hylesinus piniperda*, Fabr." What the insect was that Latreille actually had before him cannot be definitely determined; it must, however, have been a species of either *Hylastes* or *Myelophilus*.

Recently, as in the last catalogue of European Coleoptera (1891), it has been customary to retain *Hylastes*, and entirely to exclude *Tomicus* in favour of *Ips*. This is the most satisfactory solution and, as far as the use of *Ips* goes, the inevitable one. Unfortunately the employment of *Ips* elsewhere in the present work (Col. II. 1, p. 387) makes it necessary to retain *Tomicus* in its ordinary significance.

The species of *Tomicus* are the most important and destructive of conifer-feeding Scolytidæ; their natural habitat is in the great conifer-forests of the Palæarctic and Nearctic regions, outside which few species occur. Four have been found within our limits.

1. Club with sutures 1 and 2 acutely angulate . . . . . 2.
   Basal joint of club oblong-oval, the others lunate; the sutures subcircular; apex of each elytron tridentate . . . . . *concinnus*, Mann.
2. Margin of apical excavation of each elytron with four teeth . . . . . *plastographus*, Lec.
   Margin of apical excavation with six teeth; posterior half of the prothorax with fine scattered punctuation . . . . . *interstitialis*, Eichh.
   Margin of apical excavation with five teeth; posterior half of the prothorax with close subrugulose punctuation . . . . . *cribricollis*, Eichh.

1. **Tomicus plastographus.** (Tab. VII. fig. 6, apex of elytra.)

Tomicus plastographus, Lec. Trans. Am. Ent. Soc. ii. p. 163 (Sept. 1868) [1]; Rhynch. N. Am. p. 364 [2].
Tomicus integer, Eichh. Berl. ent. Zeitschr. 1868, p. 273 (March, 1869) [3]; Rat. Tom. p. 226 [4].

Hab. North America, New Mexico [2], California [1 2] (*Ricksecker*).—Mexico [3 4], Omilteme in Guerrero (*H. H. Smith*), Mexico city, Salazar, Toluca, Amecameca, Jalapa (*Höge*), Toxpam (*Sallé*).

Of the identity of *T. integer* and *T. plastographus* there cannot be any doubt. I have been able to compare a typical specimen of the former with examples sent me as *T. plastographus* from Monterey, in California, by Mr. Ricksecker, and answering fully to Leconte's description. It is the only known American *Tomicus* with four teeth on each elytron, and with the antennal sutures sharply angulate. Mr. Höge has sent us long series, chiefly from Amecameca, the examples of which vary a good deal in size, colour, and development of the elytral teeth.

It may be noted here, once for all, that whenever, as in this case, Leconte's and Eichhoff's names published in 1868 are found to clash, the former have priority, contrary to what those writers themselves have supposed. For the date of publication of Eichhoff's names, see Berl. ent. Zeitschr. 1868, p. xi, note.

2. **Tomicus interstitialis.** (Tab. VII. fig. 7, apex of elytra.)

Tomicus interstitialis, Eichh. Berl. ent. Zeitschr. 1868, p. 273 [1]; Rat. Tom. p. 228 [2].

Hab. Guatemala, Balheu, San Joaquin, and San Gerónimo in Vera Paz (*Champion*). —Antilles, Jamaica [1 2].

A long series of this species was taken by Mr. Champion, the examples varying in colour from pale testaceous to ferruginous and piceous-black, and in size from 3·6 to 5·4 millim. They agree completely with the type, now in the Chapuis collection, except that the interstitial punctures on the elytra are less close.

3. **Tomicus cribricollis.** (Tab. VII. fig. 8, apex of elytra.)

Tomicus cribricollis, Eichh. Berl. ent. Zeitschr. 1868, p. 273 [1]; Rat. Tom. p. 229 [2].

Hab. Mexico [1 2], Omilteme in Guerrero (*H. H. Smith*); Guatemala, San Gerónimo and San Joaquin in Vera Paz (*Champion*).

Of the single Mexican example taken by Mr. Smith, and the eight specimens from Guatemala, not one corresponds rigidly with the type in the Chapuis collection. They are, as a rule, slightly smaller and less robust, the punctuation of the prothorax is variable in depth, but is weaker in all examples except that from Omilteme, and the interstices of the elytra, instead of being quite flat, show a very slight convexity. The size of the second and third elytral teeth and the extent of their coalescence is not constant and probably varies in the sexes. Though it is just possible that they are

distinct from *T. cribricollis*, they do not show sufficiently important or constant differences to justify their separation. The North-American *T. cacographus*, Lec. (=*T. grandicollis*, Eichh.) differs from the present species by its larger size and impunctate elytral interstices.

4. **Tomicus concinnus.** (Tab. VII. figg. 9 ; 9 *a*, apex of elytra.)

Bostrichus concinnus, Mann. Bull. Mosc. 1852, ii. p. 358 [1] ; 1853, iii. p. 234 [2].

Tomicus concinnus, Lec. Trans. Am. Ent. Soc. 1868, p. 164 [3] ; Rhynch. N. Am. p. 367 [4] ; Eichh. Rat. Tom. p. 232 [5].

Xylocleptes concinnus, Lec. Proc. Am. Phil. Soc. xvii. p. 623 [6].

Tomicus hirsutus, Eichh. Berl. ent. Zeitschr. 1867, p. 402 [7].

Hab. North America, Sitka in Alaska [1 2 3 4 5 7], California (*Ricksecker*).—Mexico [5], Ventanas (*Forrer*) ; Guatemala, Totonicapam, Quiché Mountains (*Champion*).

Eight examples were taken at Totonicapam, and one each at Ventanas and the Quiché Mountains. The specimen from California was detected in a series of *T. plastographus* sent to me by Mr. Ricksecker. The specimens vary in colour from ferruginous to black, in size and in the development of the second elytral tooth, which is sometimes small, sometimes large and situated at the upper extremity of a well-marked ridge extending almost to the third tooth. This is perhaps a sexual character. It is on Eichhoff's authority [5] that the Mexican examples are regarded as identical with Mannerheim's species, as he appears to have had opportunities of comparing specimens from Mexico and Alaska.

The species is intermediate in generic characters between *Xylocleptes*, Ferr., and *Tomicus*, Latr. Leconte [6] has referred it to the former genus, whereas Eichhoff retains it in *Tomicus*. With *Xylocleptes* it agrees in the shape of the club and its sutures, and to a less extent in the punctuation of the elytra and the formation of the apical impression. The latter has, however, a trispinate margin, the general appearance is rather that of a *Tomicus*, and the structure of the mentum agrees entirely with that of *T. sexdentatus* (Boern.), and not with the very different one of *X. bispinus* (Duftschm.). Moreover, it is a conifer-feeder, while the only two species of *Xylocleptes* of which the habits are known feed respectively in the stems of clematis and wild gourd.

I myself prefer to regard it as a *Tomicus*, and attach more weight to the structure of the mentum than to that of the antennal club. It is, however, quite open to anyone to keep it in *Xylocleptes*, should he so prefer.

XYLOCLEPTES.

Xylocleptes, Ferrari, Borkenk. p. 37 ; Eichhoff, Rat. Tom. p. 216.

This genus, the type of which is the common European *X. bispinus* (Duftschm.), contains some six species distributed in Europe, North Africa and Syria, North and South America.

One species has been found in Central America; or two if *Tomicus concinnus* be referred to this genus.

1. **Xylocleptes chiriquensis,** sp. n.

Oblongus, subnitidus, longe parce pilosus, ferrugineus, prothoracis disco transverse subelevato, antice asperato, postice sparsim distincte punctato; elytris subtiliter lineato-punctatis, ad suturam impressis, ad apicem retusis, ambitu retusionis subtuberculato et spina unica prope suturam instructo.

Long. 2·5–2·7 millim.

Fem. Spina retusionis minore, tuberculiformi.

Oblong, somewhat shining, ferruginous, clothed with rather scanty long hairs. Front of the head shining, feebly punctured, pubescent. Antennæ normal, ferruginous. Prothorax oblong-ovate, the base very slightly rounded, the posterior angles rounded, the sides elliptically rounded and slightly contracted towards the apex, which is more obtuse and appears subcrenate; surface with a slight median transverse elevation, behind which is an obscure impression on either side, its anterior half rather finely asperate, the posterior half shining, with distinct scattered punctures, the median smooth line obsolete or very narrow. Elytra cylindrical, one-third longer than the prothorax, with slightly oblique basal margins, the shoulders rounded rectangular, the sides parallel to near the apex, then narrowed, the apex itself obtuse; surface impressed along the suture, finely lineato-punctate, the interstices flat, punctured in rows which are only separable from those of the striæ by their not bearing hairs; apex retuse, its margin subcircular, acute, with one or two small tubercles, and terminating above near the suture in a spine which is larger and more pointed in the male than in the female, fundus concave, shining, punctured, the suture subelevated. Underside and legs ferrugineo-testaceous, the former finely punctured and pubescent.

Hab. Panama, Volcan de Chiriqui (*Champion*).

Three examples. This species is quite closely allied to *X. bispinus*, but can be separated by the rather smaller size, the absence of a wide smooth median line on the prothorax, the closer proximity of the apical spines in the male, the punctuation of the fundus, and the absence of any distinct emargination at the apex of the suture. I have assumed that the distinct difference in the size of the apical spines is sexual; the largest example is the one with the smallest spines.

DRYOCŒTES.

Dryocœtes, Eichhoff, Berl. ent. Zeitschr. 1864, p. 38; Rat. Tom. p. 283; Leconte, Rhynch. N. Am. p. 361.

Lymantor, Lɸvendal, Ent. Medd. ii. p. 69 (pro parte).

The species of this genus are at present somewhat less numerous than those of *Tomicus*, but this possibly may be reversed in course of time. Of tropical forms, a few are known from Africa, Ceylon, the Malay region, and Tropical America, but the generic characters are not beyond doubt in all cases. *Dryocœtes* approaches *Coccotrypes* and *Xyleborus*, and it is difficult to refer one or two species among these genera to their proper position. In case of doubt, the maxillary armature will at once serve to distinguish *Dryocœtes* from the other genera.

1. **Dryocœtes limbatus,** sp. n.

Cylindricus, subelongatus, subnitidus, nigro-piceus, prothoracis apice et elytris, limbo marginali excepto, subluteo-testaceis, pilis pallidis tenuibus aspersus; prothorace elliptico, anterius tantum subconstricto, granulato, linea media basali lævi; elytris striato-punctatis, interstitiis rarius uniseriatim punctatis, apice fortiter convexe declivi, utrinque præter suturam deplanato, obsolete punctato.

Fem. Fronte dense villosa.

Length 2·1–2·4 millim.

Cylindric, rather elongate, subnitid, with moderately close and long pubescence of fine pale hairs. Head black, (♂) impressed over the mouth, thinly hairy and weakly punctured, more strongly at the apex and sides; (♀) with close erect villous pubescence: eyes oval, deeply emarginate; antennæ testaceous, the club rounded, with slightly curved sutures. Prothorax longer than broad, subelliptic, usually with a constriction at its anterior third, widest behind the middle, the sides curved throughout, the apex obtusely rounded, the hind angles widely rounded, the base bisinuate; surface black, with the apical third luteo-testaceous, thinly pubescent, more closely towards the apex, granulate, with a median smooth line from the base to before the middle. Scutellum minute, obtuse triangular, black. Elytra wider at the base than the prothorax and two-thirds longer, their basal margins curved, the humeral angles rounded rectangular, callose, the callosity not shining, the sides gently curved throughout, slightly narrowed before the apex, which is truncate, its lateral angles rounded; surface cylindric, strongly and obliquely declivous for the posterior fourth, luteo-testaceous, the lateral borders and sometimes a scutellar patch and the suture black, with fine suberect pubescence, closer on the declivity, striato-punctate, the striæ shallow, the sutural stria scarcely deeper, their punctures strong and close, weaker towards the sides, interstices narrow, flat, transversely rugulose, especially towards the base, with single rows of punctures a little finer and about half as frequent as those of the striæ; declivity flattened on each side of the suture, which is narrowly elevated, shining, obsoletely lineato-punctate. Underside black, pubescent. Legs piceous.

Hab. GUATEMALA, Volcan de Agua (*Champion*).

Four specimens. The species is about the size of *Dryocœtes alni* (Georg), but more attenuated, with the punctures of the elytral striæ and interstices much stronger. I follow Eichhoff (Die eur. Borkenk. p. 213) and Hopkins in regarding the forms with a villous forehead as the female.

2. **Dryocœtes macilentus,** sp. n.

Angustus, cylindricus, subnitidus, niger, pedibus piceis, griseo-pilosus; prothorace elliptico, granulato, linea media apicem fere attingente lævi; elytris lineato-punctatis, stria suturali solum subimpressa, interstitiis subæqualiter uniseriatim punctatis, subrugosis, apice fortiter declivi, deplanato, subtilius punctato.

Long. 2·3 millim.

Cylindric, elongate and narrow, subnitid, black, with suberect grey pubescence. Head subconvex in front, rugosely punctured at the sides, and thinly hairy, shining towards the middle, with a short supraoral carina, and a shallow impression above; antennæ testaceous-brown, the club rounded, with curved fringed sutures. Prothorax elliptic, longer than broad, widest at the basal third, the sides regularly curved, the apex obtusely rounded, the hind angles obtuse, the base truncate; surface thinly pubescent, covered with small granular asperities, their interspaces subreticulate, with a median smooth line traceable from the base almost to the apex. Scutellum small, obtusely triangular, convex, shining. Elytra nearly twice as long as the prothorax, not wider at the base than its greatest width, the basal borders subconvex, humeral angles subrectangular, callose and shining, sides parallel, apex very obtusely rounded; surface cylindric, strongly declivous and rounded apically, lineato-punctate, the sutural stria alone subimpressed, the punctures rather strong, in regular rows, bearing short decumbent hairs, interstices narrow, subrugose, as strongly though less closely punctured, with longer suberect hairs; declivity very

slightly flattened on each side of the suture, shining, more closely pubescent, its punctuation weaker. Underside black, pubescent, legs piceous.

Hab. MEXICO, Jalapa (*Höge*).

Two specimens. More elongate than *D. coryli* (Perr.), which it somewhat resembles; the prothorax is, however, more ample and wider behind; the punctures of the elytra are closer and in more regular rows, and the apex is less strongly and more widely impressed on either side. From *D. limbatus* it can be separated by its more elongate form, black colour, and the absence of impressed striæ on the elytra. The smaller example shows certain differences in the shape of the prothorax, which is less narrowed towards the base, and in the punctuation of the elytra, which is relatively a little coarser and less close.

3. **Dryocœtes maurus,** sp. n.

Oblongus, subnitidus, niger, pedibus piceis, antennis tarsisque testaceis, parce pilosus; prothorace subelliptico, anterius angustato, dorso granulato, linea media lævi; elytris conferte striato-punctatis, interstitiis angustis, rugulosis, rarius punctatis, posterius seriato-pilosis, declivitate leviter deplanata.

Long. 2 millim.

Oblong, not elongate, slightly shining, black. Head flattened in front, closely punctured towards the sides, thinly punctured and more shining towards the middle, pubescence scanty except along the mouth; antennæ testaceous-brown, club suboval, the sutures visible on the outer face. Prothorax not longer than broad, widest near the base, narrowed towards apex, the sides little rounded behind, more strongly in front, apex obtusely rounded, hind angles obtuse; surface gradually and convexly declivous in front, subglabrous, granulate, the granules finer and less close behind, median line very narrow, not shining. Scutellum very small, triangular. Elytra more than one-half longer than the prothorax, their sides nearly straight to the middle, then gradually rounded, apex obtuse; surface with close shallow striæ of rounded punctures, the sutural stria not deeper, interstices narrow, transversely rugose, punctured rather more remotely than the striæ, the punctures towards the apex and on the two first interstices tending to be replaced by minute granules bearing rather short pale hairs; declivity convex above, very slightly flattened from side to side. Underside black; legs piceous with lighter tarsi, the tibiæ rather strongly expanded before the apex.

Hab. GUATEMALA, El Tumbador (*Champion*).

This species is represented in our collection by a single example, which corresponds in many respects with Eichhoff's description of *D. carbonarius* (Ferr.), from Cuba; but is distinguishable by the articulate antennal club, the piceous legs, and the non-retuse apex of the elytra, the flattening of which is very slight and has no determinate limits.

Subgroup II. XYLEBORI.

Xyleboridæ, Eichhoff, Rat. Tom. p. 308.

As previously mentioned, this subgroup includes two out of the three genera of Eichhoff's subfamily, *Gnathotrichus* being placed elsewhere. Limited, therefore, to *Coccotrypes* and *Xyleborus*, so far as Central-American genera go, it forms a very distinct and well-defined association, one of the most striking characters of which is

the dwarfed and subapterous condition of the comparatively rare males. The Xylebori, together with the other components of Eichhoff's section Xylophagi, and the Platypodides constitute the so-called "ambrosia" beetles. Burrowing deeply into wood of various kinds, they are nevertheless not true wood-feeders, either in the larval or imago stage, but subsist on certain minute fungi that grow in the galleries and produce the black coloration which is diagnostic of the burrows of this biological group. The habits of all these insects have lately been thoroughly investigated and the results published in a remarkable and highly interesting paper by Mr. H. G. Hubbard ("The Ambrosia Beetles of the United States," U.S. Dept. of Agriculture, Bull. no. 7, new series, 1897).

According to Mr. Hubbard, the perfect insects tend their young in a manner utterly foreign to most Coleoptera, and akin to that of the social Hymenoptera and Neuroptera; the larvæ themselves manifest a considerable amount of intelligence, and are able to show fight for the protection of their younger brethren. The ambrosial fungus does not grow at random, but is started by the mother on a carefully prepared bed, and the excrement of the larvæ is also used to form new propagating-beds or layers. A certain amount of moisture in the wood is necessary for the growth of the fungus, and, unlike Anobiidæ, these Scolytids never by any chance propagate in dry and seasoned timber, usually attacking sickly, dying, or recently dead trees in which the sap has begun to ferment. A few species, however, are known to infest wine- or beer-casks in which the necessary condition of the wood has been artificially produced, and these may cause enormous damage, as has happened in India.

A third genus of this subgroup, *Premnobius*, Eichh., is likely to occur in Central America. The single described species, *P. cavipennis*, Eichh., is recorded, singularly enough, from the Cape of Good Hope and Colombia. I have an example of it and two or three of a larger undescribed species from tobacco, possibly Mexican.

The two known Central-American genera may be separated as follows:—

Tibiæ straight, widened apically, truncate at the apex; prothorax uniformly convex, nearly uniformly scabrous with small asperities, obsoletely margined at the base; body subovate . . . . . *Coccotrypes*.

Tibiæ compressed, dilated towards the apex, their superior border rounded; prothorax not bordered at the base, usually declivous in front, with a more or less distinct median gibbosity, rarely granulate or asperate behind the middle; body usually cylindrical . . . . . *Xyleborus*.

COCCOTRYPES.

Dryocœtes, Eichhoff, Berl. ent. Zeitschr. 1864, p. 38 (pars).
Anisandrus, Ferrari, Borkenk. p. 24 (pars).
Coccotrypes, Eichhoff, Rat. Tom. p. 314.

The species of this genus consist of a small number of closely allied forms which

have not been extensively studied, and the distinctions between which are doubtful and in some cases to be regarded as provisional. They are widely distributed in tropical and subtropical countries, and the only well-known species, *Coccotrypes dactyliperda*, Fabr., is occasionally imported in dates. In the case of this species the males are known to be modified in a similar way to those of *Xyleborus*, but it is not stated by any one who has had the opportunity of examining them whether they are incapable of flight. The habits show an analogy with those of some species of *Hypothenemus*; they have not, however, been closely investigated, and I am not aware that these insects have been definitely observed to be ambrosia-feeders. Though more species must occur there, one only has reached us from Central America, and though unable to identify it exactly with any described form I hesitate to describe it as new.

1. **Coccotrypes,** sp.

Hab. GUATEMALA, Cahabon in Vera Paz (*Champion*).

The single example resembles and may be a variety of *C. pygmæus*, Eichh., from Madagascar, Africa, and San Domingo. It differs as follows:—Shorter in form, the prothorax broader and more constricted in front, less remotely granulate; the elytra more shining, less convex posteriorly, the punctures more evident though shallow, the rows scarcely impressed, the interstitial setæ longer, stouter, and paler throughout.

XYLEBORUS.

Xyleborus, Eichhoff, Berl. ent. Zeitschr. 1864, p. 37; Rat. Tom. p. 315; Leconte, Trans. Am. Ent. Soc. 1868, p. 159; Rhynch. N. Am. p. 358.

Anisandrus, Ferrari, Borkenk. p. 24 (pro parte).

This is one of the most interesting and important of Scolytid genera, and if not subdivided will eventually be the largest. Founded by Eichhoff, it was left by him with seventy-four species, of which all but ten had been described by himself. The addition of species, principally North-American, which he had not recognized and of the various novelties which have since been described, chiefly by Schaufuss and myself, go far towards doubling Eichhoff's total. Nevertheless, the genus is at present smaller than *Platypus*, although in every country, such as Japan, which has been thoroughly collected, it is the richer of the two in species.

In this work 36 species only of *Xyleborus* are recorded from Central America, as against 46 of *Platypus*; but the numbers of the latter genus are swelled by the collections made in Mexico by Sallé for Chapuis's monograph. A fairer comparison is afforded by the fact that Mr. Champion took 29 species of *Platypus*, as against 34 of *Xyleborus*, of which the superiority is thus maintained.

A collation of all the large extant collections of beetles would probably result in the identification of from 300 to 400 species of *Xyleborus*.

Their distribution extends to all timber-producing countries, but, unlike *Tomicus*, they occupy a very subordinate place in temperate regions, to become abundant and a dominant genus in the tropics. Here many of the smaller forms have an enormous range, and thereby give rise to various difficult problems, economic and systematic. Exclusively ambrosia-feeders, they thrive exceedingly in spite of the constant inter-breeding that the degeneration of the males necessitates, and are associated with many forms of injury. Cacao-trees in Java, tea-plants in Ceylon, fruit-trees in Europe and North America, beer-barrels in India, and hot-house orchids, are among the manifold victims of their destructive capacity.

The species differ remarkably in shape among themselves, perhaps more so than in any other genus of Coleoptera, but preserve a characteristic common habitus which rarely leaves room for any doubt in referring an example to the genus.

It has been recently stated that the classification of the genus presents great difficulties and is at present in much confusion. This is scarcely correct, except in so far that the increase in the number of described forms has rendered Eichhoff's admirably clear descriptions and tables non-representative of existing knowledge. In no genus of Scolytidæ, considering its size, is identification so easy, the only exception being in a group of small and widely-distributed forms (*vide infra*: *X. torquatus* and *X. affinis*), strongly represented among the United States species, which the writer in question had in his mind. But even among these there is little trouble in referring most examples to their species, or to one of two species, by the aid of Eichhoff's descriptions alone, the real difficulties arising from the fact that the "species" are found to be connected by intermediate forms which cannot be placed except arbitrarily. Troublesome as such problems are, they are met with in every branch of zoology and botany and are beyond the power of ordinary methods of classification to solve.

In comparison with *Pycnarthrum*, *Cryphalus*, *Hypothenemus*, or the *Platypi trispinati*, even the *Xylebori* of the *torquatus*-group are easy to study.

A small number of Oriental species have been separated from *Xyleborus* to form the genera *Eccoptopterus*, Motsch., and *Progenius*, Blandf.; but the genus does not seem to admit of further division, which, indeed, is not required. Ferrari's genus *Anisandrus*, based on the male characters of a few species, is absolutely worthless, and it is surprising that it should still be employed at all.

As with *Platypus*, it is necessary to tabulate the sexes separately. Owing to the small number we possess, the dichotomous table of the males is useful only as an indication of the probable affinities of any form that may be placed by it.

Males. Prothorax usually depressed or broadly impressed anteriorly, with feeble asperities, its anterior margin sometimes excised or armed; body relatively smaller and less robust, subapterous.

Females. Prothorax not depressed or impressed in front, more strongly asperate, the anterior

margin at most with a median group of tubercles; body relatively larger and more robust, winged.

Males.

1.	Base of the prothorax raised in the middle	2.
	Base of the prothorax not raised	3.
2.	Elytra with one large spine on each side of the apical impression . .	*cælebs*, sp. n.
	Elytra with several small spines on each side of the impression . . .	*salvini*, sp. n.
3.	Prothorax produced over the head into a transverse plate	4.
	Prothorax not produced into a plate	5.
4.	Anterior margin of the prothorax entire	*monachus*, sp. n.
	Anterior margin of the prothorax trilobate	*spathipennis*, Eichh.
5.	Prothorax slightly depressed in front, without a median tooth . . .	*spinulosus*, sp. n.
	Prothorax impressed in front, with a median apical tooth	*affinis*, Eichh.

Females.

1.	Prothorax subglobose or ellipsoid, broadly rounded in front from behind the middle, not longer than broad (except in *X. exaratus* and *X. interpunctatus*, in which, however, the discal elevation is distinctly postmedian)	2.
	Prothorax subrectangular, the sides and apex separately and obtusely rounded, the anterior angles therefore evident	15.
	Prothorax cylindric, oblong, strongly rounded at the apex, the sides posteriorly subparallel, the discal elevation median or ante-median .	19.
2.	Declivity of elytra retuse or excavate	3.
	Declivity convex, at most slightly flattened	10.
3.	Prothorax with a median group of prominent tubercles on the apical border	4.
	Prothorax uniformly rounded in front	7.
4.	Elytral excavation with a single large spine on each side	5.
	Excavation with several small spines on each side	*salvini*, sp. n.
5.	The spine situate at the upper part of the lateral callus; prothorax black	6.
	The spine situate in the middle of the lateral callus; prothorax rufous .	*sanguinicollis*, sp. n.
6.	Elytral spines cylindric, obtuse	*godmani*, sp. n.
	Elytral spines conical, acute	*sharpi*, sp. n.
7.	Elytral interstices with fine uniseriate punctures; fundus of the excavation not tuberculate	8.
	Interstices multipunctate; fundus of the excavation tuberculate . . .	*horridus*, Eichh.
8.	Apex of the elytra with four acute spines	9.
	Apex of the elytra without spines	*squamulatus*, Eichh.
9.	Elytral spines very long, the lower pair less than their length apart . .	*ferox*, sp. n.
	Elytral spines short, the lower pair more than their length apart . . .	*spinulosus*, sp. n.

10.	Elytra with feeble irregular punctuation; apical margin of the prothorax subprominent in the middle	11.
	Elytra distinctly seriato-punctate; apical margin of the prothorax regularly rounded	12.
11.	Elytra shining at the base, the declivity opaque, commencing before the middle	*capucinus,* Eichh.
	Elytra uniformly shining, the declivity commencing behind the middle.	*villosulus,* sp. n.
12.	Prothorax entirely asperate, dull	*gilvipes,* sp. n.
	Prothorax shining and punctured at the base	13.
13.	Apex of the elytra convex, not carinate at the sides	14.
	Apex of the elytra flattened, dull, with a sharply carinate side margin .	*spathipennis,* Eichh.
14.	Elytral striæ strong, crenate, the declivity uniformly tuberculate . .	*exaratus,* sp. n.
	Elytral striæ rather fine, the declivity with stronger tubercles near the suture	*interpunctatus,* sp. n.
15.	Base of the prothorax dull, closely asperate; elytral declivity convex, not sharply margined	*rugicollis,* sp. n.
	Base of the prothorax shining and scantily punctured	16.
16.	Declivity with setiferous tubercles on the alternate interstices: length over 6 millim.	*princeps,* sp. n.
	Declivity with setiferous tubercles on all interstices	17.
17.	Length over 3·5 millim.	18.
	Length not exceeding 2·5 millim.	*posticus,* Eichh.
18.	Front coarsely punctate	*commixtus,* sp. n.
	Front finely punctate	*quadratus,* sp. n.
19.	Declivity very oblique, impressed, sharply margined below	*costaricensis,* sp. n.
	Declivity more or less convex, not sharply margined below	20.
20.	Declivity not tuberculate; elytral interstices multipunctate	*imbellis,* sp. n.
	Declivity tuberculate; interstitial punctures uniseriate or absent . .	21.
21.	All interstices uniformly seriato-tuberculate on the declivity	*intersetosus,* sp. n.
	Interstices not uniformly tuberculate on the declivity	22.
22.	Declivity with series of tubercles on the first and third interstices, the second subimpressed and unarmed	23.
	Declivity with two or four prominent tubercles not forming part of a regular series	2.
23.	Body subacuminately narrowed behind	*cuneatus,* Eichh.
	Body not subacuminately narrowed behind	24.
24.	Declivity convex, shining.	25
	Declivity somewhat flattened, subopaque, its tubercles very small . .	*affinis,* Eichh.
25.	Elytral interstices punctured in rows	26.
	Interstices with a few scattered punctures or impunctate	28.
26.	Elytra finely lineato-punctate, the sutural row not impressed . . .	*morulus,* sp. n.
	At least the sutural row of punctures impressed	27.
27.	Declivity strongly and abruptly rounded, the apical margin obtuse . .	*intrusus,* sp. n.
	Declivity oblique, the apical margin strongly rounded	*propinquus,* Eichh., & 213 *torquatus,* Eichh. 214

28.	Elytra with subimpressed striæ; prothorax slightly narrowed and strongly rounded in front	*interstitialis*, Eichh.
	Elytra finely lineato-punctate; prothorax somewhat obtusely rounded in front	*catulus*, sp. n.
29.	Elytral declivity with a single prominent tubercle on each third interstice	30.
	Declivity flattened, with four prominent tubercles arranged in a square.	*declivis*, Eichh., and *macer*, sp. n.
30.	Elytral interstices punctured	*fuscatus*, Eichh.
	Elytral interstices impunctate	*confusus*, Eichh.

1. **Xyleborus godmani**, sp. n. (Tab. VII. figg. 10; 10 *a*, apex of elytra.)

Fem. Oblongo-ovalis, sat nitida, parce breviter pilosa, nigra, antennis pedibusque fuscis; prothorace amplo, convexo, subtransverso, margine apicali tuberculis prominulis ornato, dorso gibboso, post medium punctato; elytris prothorace sublongioribus, a medio oblique retusis excavatis, indistincte lineato-punctatis, interstitiis multipunctatis et posterius seriato-tuberculatis, ambitu excavationis in parte superiore utrinque bispinato, spinula superiore prope suturam parva acuta, altera antemediana magna, obtusa.

Long. 4·3 millim.

Female. Oblong-oval, somewhat shining, black. Head large, finely reticulate, dull, the front convex, with moderately deep punctuation and with a median sulcus towards the vertex, continued to the mouth as an indistinct smooth line in the middle of which is a subelevated shining patch; mouth fringed with fulvous hair; eyes small, oblong, flat and deeply emarginate in front; antennæ fusco-piceous. Prothorax ample, convex, rather broader than long, hind margin transverse, impressed on each side, hind angles obliquely rounded, sides nearly straight and parallel behind, gradually curving in front into the broadly rounded apical margin, which has five prominent tubercles in the middle and is subsinuate on each side; surface with a median transverse obtuse elevation produced obliquely backwards at the sides, subglabrous, asperate anteriorly, its hinder half not strongly shining, closely reticulate and moderately punctured. Scutellum triangular. Elytra as wide as the prothorax and about one-fourth longer, subtruncate at base, the humeral calli not prominent, the sides gently rounded, narrowed about the posterior fourth and then somewhat abruptly inflexed to the obtuse apical margin; surface subcylindrical, impressed round the base and obliquely excavate from the middle to the apex, with indistinct rows of minute punctures; interstices flat, transversely wrinkled and finely multipunctate, apex of the inner with one or two, of the outer with several, spinous setiferous tubercles: apical excavation longitudinal oval, deeply impressed, transversely rugose and finely punctured, the sutural margins narrowly raised; side-borders prominent and callose above the lower third, rather sharp below, margined by the interstitial tubercles, and armed each with two spines, the first small, near the suture at the apex of the second interstice, the second at the anterior extremity of the callosity, large, directed backwards, obtuse and cylindrical, terminated by a short bristle. Underside piceous. Legs fuscous, the tibiæ thickly fringed, finely and obsoletely serrate; tarsi normal.

Hab. Panama, Bugaba (*Champion*).

One example. This and the four following species are among the most distinct forms in the genus, and are allied to *X. insignis*, Eichh. In *X. godmani* there are three series of tubercles outside the large spines on the elytra, their terminal members constituting the serrate tubercles which margin the excavation; these series, so far as their position can be identified, are on the fourth, fifth, and sixth interstices.

2. **Xyleborus cælebs,** sp. n.

Mas. Oblongo-ovalis, sat nitens, breviter erecte pilosus, piceus, pedibus antennisque fuscis; prothorace transverso, apice obtusiusculo, inermi, supra anterius depresso, posterius irregulariter punctato, margine basali medio acute elevato; elytris prothorace sesquilongioribus, oblique declivibus et præter suturam excavatis, excavatione opaca rugulosa, margine utroque laterali callose elevato, et spina magna per longum compressa paullo post medium instructo.

Long. 3·7 millim.

Male. Oblong-oval, dull piceous. Front flattened, impressed over the mouth and foveolate below the vertex, the upper margin of the impression subelevated, shining, and connected with the fovea by an indistinct ridge; surface moderately shining, irregularly and strongly punctate, closely along the mouth: mandibles prominent; eyes small, deeply emarginate; antennæ fuscous. Prothorax a little broader than long, bisinuate at the base, its margin elevated in the middle into a transverse carina, gradually sloped in front, hind angles obtuse but not rounded, the sides widest about the middle, thence strongly rounded into the apical margin, which is obtuse and not tuberculate in the middle, and subsinuate on either side; dorsum depressed along the middle from the hinder third to the apex, anteriorly with rather feebly scattered asperities, absent over the median line, which posteriorly is rather closely punctured and laterally subimpressed; rest of the surface moderately shining and irregularly punctured, with a glossy impunctate patch before the basal carina, pubescence scanty, erect. Scutellum small, triangular. Elytra narrower than the prothorax and one-half longer, their bases subsinuate, the shoulders subrectangular, the sides gently rounded up to the posterior third, but not narrowed, thence obliquely rounded to the apical margin, which is slightly incurved in the middle; surface longitudinally convex, impressed along the suture and obliquely retuse behind, very indistinctly punctured in rows, the interstices with fine confused setiferous punctures, the outer ones obsoletely tuberculate at their apex; declivity oblong, rather narrow, continued in front into the sutural impression, dull, rugulose and granulate, its side-margins callose, elevated behind the middle into a large compressed process terminating in a blunt spine directed inwards and backwards; anterior margin of the process continued forwards to form the ridge of the lateral callus, posterior margin directed at first forwards from the apex of the spine and then nearly vertically; lower border of the excavation not acute, with a single tubercle at the extremities of the subconcave hind-margin. Underside and legs fuscous, the abdomen subimpunctate, the tibiæ formed as in *X. godmani*.

Hab. Panama, Volcan de Chiriqui (*Champion*).

The single example is the male of a species closely allied to *X. godmani*, but the differently constructed elytral armature does not allow it to be referred to that species. The differentiation of this group of forms requires close attention to be paid to this armature. Whilst in *X. godmani* the large lateral spine is situated towards the front of the excavation, at the anterior end of the lateral callus, in *X. cælebs* its position is much farther back, on the callus itself and rather behind its middle.

3. **Xyleborus sanguinicollis,** sp. n. (Tab. VII. fig. 11, apex of elytra.)

? *Bostrichus ruficollis,* Fabr. Syst. El. ii. p. 388.

Fem. Oblongo-ovalis, sat nitida, parce erecte pilosella, rufo-testacea, elytris nigris; prothorace fere ut in *X. godmani* constructo; elytris prothorace sublongioribus, oblique excavatis retusis, declivitate ante medium incipiente, in utroque latere spicula parva superne prope suturam, et spinula acuta medio armata.

Long. 3·7 millim.

Female. Oblong-oval, rather shining, bright red-testaceous with black elytra, pubescence scanty, erect, confined to the sides and extremities. Front convex, reticulate and dull, with scattered punctures, close over the mouth, and with an indistinct fovea near the vertex; mouth black, fringed; eyes as in *X. godmani*; antennæ testaceous-brown. Prothorax a little broader than long, as in *X. godmani*, but relatively

narrower, the hind angles very obtusely rounded, the apical margin more convex, with only four prominent tubercles, the punctuation of the hind half a little finer and sparser. Scutellum short triangular, subconvex, black. Elytra ample, about one-fourth longer than the prothorax and a little wider than its base, their basal borders separately rounded, the shoulders rectangular, the sides slightly rounded, little narrowed behind, the apical angles more abrupt and the apex more truncate than in *X. godmani*; surface convex from the base to the summit of the excavation, punctured as in *X. godmani*, the inner interstices with one or two tubercles on the margin of the excavation, the outer interstices with short rows of small piliferous tubercles at their apex; excavation beginning at the anterior third, shallow, not sharply margined, rather shining, very finely rugulose, the side-margins obtusely elevated, preceded by a small sharp tooth at the apex of the second interstice and bearing about their middle an acute conical spine directed backwards and inwards, lower margin with a small tubercle on each side of the apex. Underside behind the prothorax fuscous, legs brown-testaceous.

Hab. PANAMA, Bugaba (*Champion*).

One specimen. This pretty species resembles *X. cælebs* in the position of the elytral spines, but they are much more acutely conical and their base is much smaller than in the latter species, in which it extends forwards so as to be continuous with the upper border of the callosity. *Bostrichus ruficollis*, Fabr., may well be this species if, as is possibly the case, it is not an *Amphicranus*.

4. **Xyleborus sharpi,** sp. n. (Tab. VII. fig. 12, apex of elytra.)

Fem. Oblonga, subovalis, sat nitida, piceo-nigra, antennis pedibusque fuscis, parcissime pilosa; prothorace fere ut in *X. godmani* constructo; elytris prothorace tertia parte longioribus, apice oblique excavatis, excavatione ante medium incipiente, sat profunda, lateribus callosis et spina singula acuta in parte calli superiore armatis.

Length 3·8 millim.

Female. Oblong, subovate, rather shining, piceous-black with a few fuscous hairs round the sides of the prothorax and apex of the elytra. Front dull, reticulate and punctured, with traces of a median elevated line. Prothorax a little broader than long, its hind angles subrectangular, not broadly rounded, the sides parallel to the middle, the apex strongly but somewhat obliquely rounded, feebly bisinuate, with four or five small tubercles in the middle; surface as in *X. godmani*. Elytra a third longer than the prothorax, shaped as in *X. sanguinicollis*, but less ample, especially behind; surface punctured as in that species; excavation beginning before the middle, its fundus narrow and deep, subconvex longitudinally, rugulose, the sutural borders elevated, the sides strongly callose, the anterior border furnished between the suture and the lateral calli with two or three pointed tubercles, the largest at the apex of the second interstice, the calli with a sharp triangular spine at their anterior extremity, the lower margin more or less crenate or tuberculate, with a larger tubercle at the outer angle of the apical truncation. Underside piceous; legs fuscous.

Hab. MEXICO, Toxpam (*Sallé*), Atoyac in Vera Cruz (*H. H. Smith*); GUATEMALA, Paraiso (*Champion*).

One specimen has been obtained from each locality. They differ slightly *inter se* in the rugosity and amount of gloss over the elytral excavation, and in the degree of tuberculation of its lower margin, which in the specimen from Atoyac is almost serrate, though much less strongly so than in the allied *X. insignis*, Eichh., from Cayenne. It is to *X. sharpi* among this group that *X. insignis* most approximates; but it is a smaller and more cylindrical insect, with the elytral punctuation stronger than in any Central-American species, the excavation and its lateral calli very dull, coarsely and rugosely

punctured, its margin markedly serrate below, and the surface outside the large spines hispid with more numerous tubercles.

5. **Xyleborus salvini,** sp. n. (Tab. VII. fig. 13, apex of elytra.)

Oblongus, niger vel piceus, antennis pedibusque rufescentibus, erecte pilosus; elytris lineato-punctatis, a medio oblique retusis excavatis, excavatione lata, haud profunda, spinulis multis subæqualibus circumdata.

Mas. Pallidior, prothorace depresso, margine antico haud tuberculato, margine postico medio prominulo.
Long. 2·7 millim.

Fem. Major, prothorace convexo, margine antico tuberculis subprominulis ornato, margine postico simplici.
Long. 3·5 millim.

Male. Oblong, fusco-piceous, lighter posteriorly, with short erect pubescence. Front flattened, rather dull, finely punctured, thinly pubescent, the mouth fringed; eyes small, quite flat. Prothorax almost as long as broad, its hind margin bisinuate, produced slightly backwards and elevated in the middle into a transverse carina as in *X. cælebs*, the sides subparallel behind, but gradually rounded from behind the middle, the apical margin strongly rounded and prominent in the middle; surface depressed throughout from base to apex, with a slight impression on either side behind the middle, its anterior third with fine obsolete asperities, replaced over the middle by aciculate, and at the base by scattered irregular punctures. Scutellum triangular. Elytra as wide as the prothorax and a third longer, separately rounded at base, the shoulders rounded, the sides not narrowed till near the apex, then regularly rounded to the truncate hind margin; surface somewhat flattened transversely, convex longitudinally, obliquely declivous from before the middle, with very indistinct lines of punctures bearing fine erect hairs; apical impression long-oval, reaching the middle of the elytra, shallow, its fundus longitudinally convex, shining and subrugulose, the side-margins narrowly elevated, with about six small spinous tubercles, largest in the middle. Underside and legs testaceous-brown.

Female. Black or piceous. Head as in *X. sharpi*. Prothorax broader than long, widest before the base, its hind angles obtusely rounded, the sides rounded throughout, very slightly behind, gradually more strongly towards the apex, the marginal tubercles of which are small; surface as in the preceding species. Scutellum triangular. Elytra one-third longer than the prothorax, and narrower than its greatest width, their outline as in the male; surface less depressed, more cylindrical and less obliquely declivous; lineato-punctate, the punctures more distinct than in the preceding species, the interstices with one or more series of fine piliferous punctures, replaced behind by minute tubercles, more numerous than in the preceding species, the inner interstices with three or four each; excavation oval, reaching the middle of the elytra, as in the male, but rather more concave laterally, the side-margins more elevated but not callose, more strongly pilose, serrate with a row of small tubercles, the middle three on each side larger, spinous. Underside piceous or black, the tarsi lighter.

Hab. Panama, Volcan de Chiriqui (*Champion*).

I have seen one male and three females of this species, which is at once separable from its neighbours by the absence of any single large spine in the armature of the elytral excavation. There appear to be typically three larger spinous tubercles on each side which are acute and directed backwards; in one specimen they are irregular, the lower pair being conjoined *.

* Closely allied to *X. salvini* is *X.* (*Amphicranus*) *perebeæ* (Ferr.), which is to be referred to this part of the genus. It is about half the size, less robust, with the apical margin of the prothorax not prominent; the elytra are relatively longer, the declivity is more oblique, its surface wrinkled. The marginal armature consists of a small spine at the apex of the first interstice, two at the apex of the third interstice, the second being the larger and standing within the margin of the declivity, then a series of three, preceded by one or two small tubercles, and increasing in size, the third and largest standing below the middle of the declivity;

6. **Xyleborus ferox,** sp. n. (Tab. VII. fig. 14, apex of elytra.)

Fem. Oblonga, posterius angustata, sat nitida, tenuiter erecte pilosa, dilute testacea, capite et prothorace et elytrorum declivitate infuscatis, spinulis nigricantibus; prothorace latitudine vix longiore, apice rotundato, dorso posterius vage subtiliter punctulato; elytris lineato-punctatis, interstitiis uniseriatim pilosis, declivitate obliqua, retusa, prope medium incipiente, spinulis quatuor longis, acutis, curvatis armata, margine acute tuberculato.

Long. 2·7 millim.

Female. Oblong, gradually narrowed posteriorly, rather shining, with fine erect pubescence. Head large, fusco-testaceous, the mouth blackish; front convex, finely alutaceous, glabrous; antennæ testaceous-brown. Prothorax a very little broader than long, its base truncate, the hind angles obtusely rounded, the sides nearly straight and subdilated to the anterior third, thence subcircularly rounded and crenate; surface convex, its transverse elevation slight and ante-median, fusco-testaceous with the sides and apex darker, asperate anteriorly, moderately shining and delicately reticulate behind the elevation, with scattered minute punctures, pubescence fine, erect and uniform. Scutellum minute, rounded, convex. Elytra less than a third longer than the prothorax and narrower than its widest part, separately and slightly rounded at base, the sides gradually and obliquely rounded from the basal third to the narrow subtruncate apical margin; surface longitudinally convex at the base, then becoming subcylindric to the declivity, pale testaceous with the side-margins darker, finely punctured in rows, the punctures of the sutural row stronger, interstices flat, each with a single row of short erect hairs, the first three with two, the remainder with one small pointed tubercle on the margin of the declivity; this is oblique, beginning near the middle of the elytra, longitudinally oval, concave, subinfuscate, shining, with the rows of punctures and bristles distinctly continued on it, and armed with four long acute spines, the upper pair near its anterior extremity within the marginal tubercles, recurved inwards and downwards, the lower pair on the inferior margin, separated from the sutural apex by a small pointed tubercle, and recurved inwards and upwards, the spines and tubercles tipped with black. Underside and legs fusco-testaceous, the former nearly glabrous; tibiæ with numerous fine serrations. Tarsi normal.

Hab. Panama, Bugaba (*Champion*).

One specimen; judging by the succeeding closely-allied species this example would seem to be somewhat immature, but its appearance does not positively indicate this. In the strong spines with which their elytra are armed these two species show a remarkable resemblance to *Eccoptopterus sexspinosus*, Motsch. (=*Xyleborus* or *Platydactylus abnormis*, Eichh.). This insect, or rather its congener *E. gracilipes* (Eichh.), was separated by Eichhoff from *Xyleborus* on account of the structure of its posterior tarsi, which are very long, and have the first three joints vertically flattened and trigonate. This is not apparent in the species under consideration.

7. **Xyleborus spinulosus,** sp. n. (Tab. VII. fig. 15, apex of elytra, ♀.)

Mas. Oblongus, sat nitidus, fuscus, elytris apice dilutioribus, antennis et pedibus testaceis; prothorace sub-depresso, lateribus et apice singulatim rotundatis, dorso antice subasperate postice simpliciter sparsim

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after a slight interval there are two more spines towards the apex of the declivity, of which the first is the larger. The declivity is thus margined by eight spines on each side, of which the third, sixth, and seventh are the largest. The armature is not quite symmetrical on both sides of the type-specimen, now in the Vienna Museum. It was found by Nördlinger in the stem of a *Perebea* stated to be from Colombia, and its reference to the entirely distinct genus *Amphicranus* has caused it to be relegated hitherto to the limbo of unrecognized species "*incertæ sedis.*"

punctato; elytris a basi convexis, subconfuse punctatis, seriato-setosis, declivitate utrinque subimpressa.

Long. 1·9 millim.

Fem. Oblonga, sat nitida, breviter erecte pilosa, nigra vel fusca, elytris nonnunquam postice dilutioribus; prothoracis apice rotundato, crenato, dorso posterius vage punctato; elytris post medium oblique rotundatis, lineato-punctatis, interstitiis seriato-pilosis; declivitate obliqua, retusa, supra utrinque serie 2 aut 3 spinarum, et spina in ambitu inferiore armata, spinis 4 ultimis majoribus.

Long. 2·3 millim.

Male. Oblong, shining, fusco-piceous, the elytra lighter posteriorly. Front moderately convex, dull, subglabrous, obsoletely punctate; antennæ testaceous, the club narrow. Prothorax as long as broad, the sides and apex gently and separately rounded, therefore subquadrate but with rounded anterior angles, hind angles obtuse; disc depressed, but uniformly subconvex, not gibbous, sparingly and finely punctate, the punctures subasperate in front but scarcely closer, pubescence rather long, thin, the median line just perceptibly elevated behind, interspaces reticulate towards the base. Scutellum minute, subtriangular. Elytra narrower at base than the prothorax and one-half longer, shoulders obtuse, the sides gently rounded, narrowed behind, apex obtusely rounded; surface longitudinally convex, declivous behind the middle, finely rugulose, with shallow, rather remote punctures in irregular rows, setæ erect, stout, regularly placed, closer and stronger behind the middle; declivity with a shallow irregularly punctate impression on each side. Underside fuscous, legs testaceous-brown.

Female. Oblong, moderately shining, black, piceous or fuscous (immature). Head reticulate, the front convex, rather closely punctured and shortly pubescent. Prothorax narrower than in *X. ferox*, more parallel-sided, the hind angles less obtuse, the discal elevation less distinct. Elytra less narrowed posteriorly, with the sides subparallel to behind the middle, rather less distinctly punctured in rows, the setæ closer and more conspicuous, especially on the declivity, where they are short and subsquamous; the four spines smaller and shorter, the superior pair placed farther back and more laterally, and preceded on the third interstice by one or two smaller spines, rather larger than the marginal tubercles on the apex of the fifth interstice; fundus of the impressed area less shining, more closely punctate. Underside piceous or fuscous, legs fusco-testaceous.

Hab. GUATEMALA, San Gerónimo, Zapote, Mirandilla (*Champion*).—ANTILLES, Grenada (*H. H. Smith*), Guadeloupe.

Six specimens were taken by Mr. Champion; I have a series of uncertain Neotropical origin from tobacco-refuse. The single male, from Zapote, has the abdomen curiously constructed, but its appearance may perhaps be due to distortion. The first four segments are prominent in the middle line, their apical borders being strongly raised and V-shaped, reaching farther back at the sides than in the middle; the last segment is long and rather narrow, impressed in the middle, elevated and callose laterally. The female is very like that of *X. ferox*, but the elytral spines are only about as long as their width at the base, whereas in *X. ferox* they are at least twice as long. If examples be looked at above and from the front, the anterior pair of large spines is clearly seen in *X. spinulosus* to form the last of a short series of two to four spines on the third interstice, while in *X. ferox* they are preceded only by one or two small marginal tubercles which cannot be confounded with this series. In consequence this pair of spines appears in *X. ferox* to stand within, in *X. spinulosus* to stand on the lateral margin of the declivity. One example from San Gerónimo and that from Grenada have these spines very much reduced in length, without accompanying specific distinctions.

8. **Xyleborus squamulatus.**

♀. *Xyleborus squamulatus,* Eichh. Berl. ent. Zeitschr. 1868, p. 282 [1]; Rat. Tom. p. 339 [2].

Hab. GUATEMALA, Cerro Zunil (*Champion*).—BRAZIL [1 2].

To this species I refer a solitary specimen from Guatemala with some hesitation, even after comparison with the type. It shows several points of divergence from the latter example, now in the Chapuis collection, but is so immature as to make it hard to say how far these points are material or merely the result of its condition. It is a little less robust; the elytra are less obtuse at the apex and more finely punctate, the depression appears narrower, deeper, more shining and less conspicuously squamose. Indeed the scales on it appear to be absent at first sight, but are seen with the microscope and clearly owe part of their inconspicuous character to immaturity; whereas the type on the other hand is an old specimen, in which the scales form a more opaque and conspicuous clothing owing to the accumulation of dirt.

The fact that the species was originally described from Brazil is of little moment; many of the *Xylebori* have an extended range, and like *X. spinulosus* are exported in articles of commerce, and not a few examples in the Chapuis collection, which bear no more precise indication of locality than "Brazil," might be as usefully and perhaps more accurately labelled "Tropical America."

9. **Xyleborus horridus.**

♀. *Xyleborus horridus,* Eichh. Berl. ent. Zeitschr. 1868, p. 282 [1]; Rat. Tom. p. 343 [2].

Hab. MEXICO, Teapa [1 2] (*Sallé*); GUATEMALA, Pantaleon (*Champion*).

A single example has reached us from each locality. The species is quite distinct and much more like a *Tomicus* than are most *Xylebori,* on account of the denser pubescence, the strong punctuation of the basal half of the prothorax, and the retuse apex of the elytra. This is, however, shallower than in any true *Tomicus,* and has no well-defined toothed lateral border; its fundus is very closely and strongly punctured and hairy, and possesses a row of four or five tubercles close to the apex on each side.

10. **Xyleborus capucinus.** (Tab. VII. fig. 16.)

♀. *Xyleborus capucinus,* Eichh. Berl. ent. Zeitschr. 1868, p. 281 [1]; Rat. Tom. p. 332 [2].

Hab. GUATEMALA, Mirandilla (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—ANTILLES, Guadeloupe [1 2] (*Fleutiaux*).

Four examples were obtained, which agree absolutely with the type except that they are piceous or piceous-black in colour, the type being very immature. The species is easily recognized amongst American *Xylebori* by its colour, long and close pubescence, the prominent tubercles on the front of the convex semi-elliptic prothorax, and the

subacuminate elytra. These are finely and confusedly punctured, slightly shining from the base to the middle, and very delicately granular on the declivity.

11. **Xyleborus monachus,** sp. n. (Tab. VII. fig. 17.)

Mas. Oblongus, subnitidus, densius pilosus, castaneus, prothoracis disco infuscato; illo oblongo anterius vix angustato, supra caput in lobum longum prorsus producto, ejus margine antico truncato, medio tuberculato, dorso antice late impresso; elytris prothorace vix longioribus, subtiliter irregulariter punctatis et pilis appressis vestitis.

Long. 2·7–2·9 millim.

Male. Oblong, moderately shining, castaneous-brown, the middle and apical margin of the pronotum infuscate. Head concealed under the prothorax, flat in front, the eyes rather small and coarsely granulate, the antennæ infuscate. Prothorax oblong, subrectangular, subbisinuate at base, the hind angles obliquely rounded, the sides straight, nearly parallel behind, slightly narrowed at the anterior third, which is produced over the head as a free obliquely-declivous peak, the fore angles rounded, the apex truncate, produced in the middle into a small triangular tooth; obliquely declivous above from near the base to the apex, the anterior third more strongly curved downwards, widely impressed, the impression occupying the apical lobe, the borders of which are acutely elevated, and extending backwards in the middle line to behind the anterior third part, its posterior margins oblique and convex, its fundus flat, shining and punctured in front, with a shallow subimpressed median space, rugulose behind; surface behind the margins of the impression flattened as far as the basal third, covered, together with the margins, with subasperate piliferous punctures, basal third rather closely punctured; median line impunctate, traceable from base almost to apex. Scutellum small, rounded. Elytra equal in length to the prothorax, almost parallel-sided to the middle and then regularly rounded to the apex; surface convex from the base, strongly declivous behind the middle, finely and irregularly punctured, with rather close decumbent pubescence. Underside and legs brownish-testaceous; the tibiæ slender and feebly spined.

Hab. Guatemala, Cerro Zunil (*Champion*).

Two examples have been obtained, with which no female form can be associated. Judging from the structure of the elytra, I take this species to be a neighbour of *X. capucinus*, Eichh., but it is too large to be the male of that species. The form of the prothorax is intermediate between that of *X. cucullatus*, Blandf., from Japan, in which the head is covered by a broad anterior lobe without any dorsal impression, and of such species as *X. eurygraphus* (Ratz.), ♂, which presents a deep fossa on the front of the pronotum and a tubercle on the apical margin, but has no marked flap-like prolongation over the head. When examined in a good light the elytra of this species show lines of punctures in their substance which are not clearly separable by reflected light from those of the interstices, the elytra then appearing irregularly punctate. It is probable that all the elytra of *Xylebori*, which appear to be confusedly punctured, would show such lines of punctures in their structure if they were sufficiently translucent.

12. **Xyleborus villosulus,** sp. n.

Fem. Oblongo-ovata, subnitida, flavo-testacea, pube erecta densius villosa; prothorace semi-elliptico, apice medio tuberculis prominulis notato, supra convexo, vix gibboso, postice confertim punctato; elytris sub-ovalibus, subtiliter lineato-punctatis, interstitiis multipunctatis, apice densius piloso, subtilissime granulato, præter suturam substriato.

Long. 2·3 millim.

Female. Oblong-ovate, slightly shining, yellow testaceous (possibly immature), covered with close upstanding fine pubescence. Front subconvex, finely punctured, scantily pubescent. Prothorax semi-elliptic, about as long as broad, widest just behind the middle, the sides curved throughout, more strongly in front, the apex subcircularly rounded, with several prominent tubercles in the middle, hind angles obtuse but not rounded, the base subtruncate; disc convex, very obsoletely elevated in the middle, asperate in front, the posterior half with rather close, moderately fine piliferous punctures, their interspaces reticulate, the median smooth line very narrow. Scutellum small, rounded triangular, infuscate. Elytra narrower at base than the prothorax, and one-third longer, widest about the middle, the shoulders obtusely rounded, the sides rounded throughout, more strongly and very obliquely towards the apex, which is almost acuminate; surface longitudinally convex, becoming declivous about the middle, with indistinct rows of shallow punctures, interstices with close irregular very fine piliferous punctures; declivity convex, not more opaque, more densely pilose, the hairs arising from minute interstitial granules, with obsolete rows of punctures, and feebly striate on each side of the suture. Underside, antennæ, and legs pale testaceous.

Hab. GUATEMALA, Rio Naranjo (*Champion*).

The head is depressed and not properly visible in the single specimen; this has not been recarded to allow of a close examination being made of the head and underside for fear of damaging the delicate and characteristic pubescence.

The species is a near neighbour of *X. capucinus*, but is smaller, more slender, with closer and more erect pubescence; the prothorax is relatively longer, not so distinctly gibbous, and the marginal tubercles are finer and less numerous; the declivity of the elytra is more gradually expressed, less opaque, and with much finer granulation.

13. **Xyleborus gilvipes,** sp. n.

Fem. Oblonga, piceo-nigra, pedibus dilute testaceis, erecte pilosa; prothorace lateribus obtuse, apice fortius rotundato, dorso omnino granulis posterius minus confertis exasperato; elytris prothorace minus sesquilongioribus, setis alternatim longioribus et brevioribus seriatis instructis, lineato-punctatis, interstitiis paullo subtilius uniseriatim punctatis post medium seriato-tuberculatis, apice sat fortiter declivi, infra marginato, parum convexo, interstitio 2° impresso obsoletius tuberculato.

Long. 2·3 millim.

Female. Oblong, piceous-black, with erect pubescence. Front convex, dull and closely reticulate, with fine subaciculate punctuation and a shining median carina, interrupted near the vertex, pubescence short, sparse; antennæ testaceous. Prothorax as broad as long, suborbicular, but with the sides more strongly rounded before than behind the middle, hind angles obtuse, the basal margin subtruncate; surface convex with a very indistinct median transverse elevation, dull, entirely asperate, more finely and sparsely over the basal half. Scutellum small, rounded triangular. Elytra a little narrower than the prothorax at its widest, and one-third longer, truncate at the base, the shoulders obliquely rounded, the sides nearly parallel, not narrowed before the obtusely rounded and sharply margined apical border; surface cylindric towards the base, strongly but not abruptly declivous behind the middle, moderately shining, with regular rows of fine punctures bearing minute setæ, the sutural row not impressed, interstices flat with single rows of finer and more numerous punctures bearing long and nearly erect setæ, and of small tubercles behind the middle; declivity slightly convex, with the sutural stria subimpressed, and the second interstice impressed and more finely tuberculate than the first or third. Underside piceous-black, the abdomen shining and subimpunctate. Legs rather pale testaceous, the knees darker; tibiæ very finely dentate.

Hab. GUATEMALA, Zapote (*Champion*).

One specimen. This species is nearly of the shape of *X. dispar*, but somewhat more

truncate, and not half the size. The complete asperation of the prothorax is very unusual in the genus; from the other described species possessing this character it can be differentiated by the non-impressed rows of punctures on the elytra.

14. **Xyleborus exaratus,** sp. n.

Fem. Subcylindrica, sat nitida, piceo-ferruginea, postice obscurior, erecte pilosa; prothorace latitudine longiori, subelliptico, dorso mox post medium tumidulo, posterius fortiter punctato, piloso; elytris haud profunde punctato-striatis, punctis magnis crenatis, interstitiis convexis irregulariter lineato-punctatis, setosis, in apice fortiter convexe declivi rugatis et subtuberculatis.

Long. 4·2 millim.

Female. Subcylindric, moderately shining, deep ferruginous, infuscate posteriorly, with uniform short erect pubescence. Front somewhat flattened, with the epistoma and a median longitudinal line subelevated, reticulate and punctured at the sides, the pubescence and oral fringe scanty; eyes large, broad, flat, narrowly emarginate in front; antennæ testaceous-brown. Prothorax longer than broad, widest about the basal third part, its hind-margin subconvex, the hind angles obtuse, not rounded, the sides nearly straight behind, elliptically curved from behind the middle to the apex; surface obtusely elevated behind the middle, subfoveolate on either side within the hind angles, anteriorly asperate, more finely before the elevation, posteriorly with strong and rather close piliferous punctures, deeper towards the sides, interspaces moderately shining, subreticulate. Scutellum small, convex, rounded, triangular. Elytra rather less than one-half longer than the prothorax, and a little wider at the base, the margin of which is bisinuate, shoulders rounded rectangular, the sides subparallel, a little widened behind the middle and then narrowed, the apex strongly and rather obliquely rounded; surface subcylindric to the hinder third, then obliquely but rather strongly declivous and convex, with shallow striæ, crenate with large punctures, and deeper posteriorly; interstices convex, with finer setigerous punctures in single rows, irregular from the base to the middle, and incompletely biseriate on the 2nd and 4th, more convex behind, with single series of small close tubercles; apical margin not acutely carinate. Underside and legs ferruginous, the abdomen with longish pubescence.

Hab. Panama, Bugaba (*Champion*).

A single example of this distinct species was taken. In aspect it is rather like a *Dryocœtes*, the characteristic gibbosity of the prothorax being slight and its basal portion more strongly punctured than usual.

15. **Xyleborus interpunctatus,** sp. n.

Fem. Cylindrica, sat nitida, piceo-ferruginea, densius erecte pilosa; fronte villosa; prothorace latitudine sublongiore; apice fortiter rotundato, dorso medio indistincte gibboso, posterius sat dense punctato; elytris striato-punctatis, interstitiis 1°, 3°, 5°, 7° uniseriatim, ceteris irregulariter biseriatim punctis piliferis notatis, apice fortiter convexe declivi utrinque tuberculis 2 parvis prope suturam munito.

Long. 3·5 millim.

Female. Cylindric, rather shining, piceous-red with dense erect pubescence. Front flattened, rugulose, with rather thick villous pubescence; antennæ fusco-testaceous. Prothorax rather longer than broad, widest behind, slightly narrowed anteriorly, truncate at base, the hind angles obtuse, the sides very feebly curved to before the middle, gradually inflexed in front to the strongly rounded apex; surface obtusely and subtransversely gibbous in the middle, with erect pubescence, rather dense and long at the apex and sides, scanty over the base, asperate in front, the basal half shining, with moderately strong punctuation, weaker towards the middle, and nearly absent over the median line. Scutellum small, rounded. Elytra as wide at base as the prothorax and nearly one-half longer, truncate at base, the shoulders rectangular, not callose, the sides subparallel to the apex, then abruptly inflexed, the apical margin therefore subtruncate but acutely carinate; surface cylindric, its posterior fourth strongly but

not abruptly declivous, with very feebly impressed rows of rather shallow punctures, interstices flat, narrow, their punctures finer, piliferous, uniseriate on the first and succeeding alternate interstices, very irregularly biseriate on the remainder; declivity moderately convex, irregularly punctured, with two tubercles on each side near the suture, and some smaller ones in the line of the 3rd and 5th interstices. Underside and legs sordid-testaceous; spines of the tibiæ not numerous.

Hab. GUATEMALA, Rio Naranjo (*Champion*).

One example. This is a distinct species in which I am unable to recognize any close affinity with described forms. Its chief peculiarity resides in the alternate arrangement of the interstitial punctures on the elytra.

16. **Xyleborus spathipennis.** (Tab. VII. figg. 18, ♂; 19, ♀.)

♀. *Xyleborus spathipennis*, Eichh. Berl. ent. Zeitschr. 1868, p. 154[1]; Rat. Tom. p. 347[2].

♂. *Xyleborus coronatus*, Eichh. Rat. Tom. p. 348[3].

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui (*Champion*).—BRAZIL[1 2 3].

There can be reasonably no doubt that, as Eichhoff suggests, *X. spathipennis* and *X. coronatus* are sexes of the same species. The difference between them lies entirely in the shape of the prothorax, which in the male is deeply excavate in the front and armed with three processes, the middle one subquadrate, concave above and prolonged over the head, the lateral processes obtusely pointed. This structure is precisely like that found in the males of the Madagascar species, *X. cornutus*, Schauf., and *X. neptunus*, Schauf. Most of the examples I have seen of this species have been Nicaraguan, and its inclusion among the insects of Brazil seems to require confirmation.

17. **Xyleborus rugicollis,** sp. n.

Fem. Cylindrica, subopaca, nigra, antennis et pedibus fuscis, breviter griseo-pilosa; prothorace subquadrato, supra post medium granulato; elytris versus apicem rotundatum paullo dilatatis, striato-punctatis, interstitiis irregulariter seriato-punctatis et rugosis; declivitate convexa, interstitiis 1° mutico, 2° sat fortiter, sequentibus subtilius tuberculatis.

Long. 4·7 millim.

Female. Cylindric, black, scarcely shining. Front convex, closely and strongly punctured, with a narrow subelevated smooth median line, pubescence scanty, the mouth fringed with long hairs. Prothorax scarcely as long as wide, slightly narrowed from the base forwards, the sides and apex separately and very slightly rounded, the general shape subquadrate, but with the anterior angles not well marked, hind angles obliquely rounded; surface with an obtuse transverse median elevation, scantily pubescent, and entirely asperate, the asperities fine and granular over the hinder half. Scutellum small, rounded. Elytra as wide at base as the prothorax, and rather less than twice as long, their sides straight but very slightly divergent from the base to the apical fourth, thence broadly rounded, the apical margin obtuser in the middle; surface subconvex from the base to the strongly rounded declivity, closely punctured in substriate rows, impressed behind the middle; interstices transversely rugulose, and irregularly marked with finer punctures, which tend to form series and are piliferous towards the apex, the second with two or three strong tubercles, the remainder with less-marked tubercles on the declivous portion, the first with traces of tuberculation before the declivity only; pubescence short, thin, and irregular, with a few longer interstitial hairs. Underside piceous-black, the legs fuscous.

Hab. Guatemala, Cerro Zunil (*Champion*).

One specimen. This is a very distinct species, differentiated from the majority of the genus by the asperate posterior half of the prothorax. In this and in other respects it approaches the Japanese *X. lewisi*, Blandf., but is separable by its more elongate form, black colour, and the prominent tubercles towards the apex of the second interstice.

18. **Xyleborus princeps,** sp. n. (Tab. VII. fig. 20.)

Fem. Sat elongata, nitida, ferruginea vel picea, parcissime pubescens; prothorace subquadrato, transverse gibboso, posterius disperse punctato; elytris punctato-striatis, striis post medium obsoletis, interstitiis subconvexis, parce irregulariter punctatis; declivitate oblique rotundata, subopaca, interstitiis 1°, 3°, 5° sat fortiter, ceteris subtiliter tuberculatis.

Long. 6·3 millim.

Female. Rather elongate, deep ferruginous, with the elytra darker behind, or entirely piceous, with very scanty erect hairs. Front moderately convex, strongly and deeply punctured, subimpressed over the mouth on either side, with a median carina extending midway to the vertex; mouth and sides fringed with long hairs; eyes large, coarsely granular, approximate to the oral border; antennæ normal, testaceous-brown. Prothorax quadrate, a little broader than long, bisinuate at the base, the hind angles obtuse but marked, the sides straight to the middle, thence rounded into the transverse apical border; surface transversely gibbous in the middle, its anterior half rather strongly declivous, asperate, its posterior half shining, with moderately deep sparse punctuation, and no distinct median line. Scutellum small, triangular. Elytra as wide at base as the prothorax and more than one-half longer, their basal borders separately rounded, humeral angles obtuse, sides straight to the middle and very slightly divergent, thence gradually rounded, the apical border obliquely rounded and sharply margined; surface convex from base to apex, obliquely declivous from the middle, with rows of strong punctures, which are deeply striate from behind the base to the posterior third, interstices shining, subconvex, transversely rugose, with fine scattered irregular punctures tending to form single rows; declivity duller, with the striæ nearly obsolete, their punctures weaker, the 1st, 3rd, and 5th interstices with three to six well-marked remote tubercles, the remainder more finely and closely tuberculate. Underside and legs brownish-testaceous; tibiæ with close comb-like teeth, upper border of the anterior pair angulated.

Hab. Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui (*Champion*).

Three specimens were taken by Mr. Champion, and one by Mr. Janson. With the exception of *Xyleborus colossus*, Blandf., from New Guinea, this is the largest described *Xyleborus*. It is very like *X. grandis*, Eichh., but is larger and relatively wider, and the very distinct difference in size of the apical tubercles on the alternate interstices of its elytra is wanting in that species.

19. **Xyleborus commixtus,** sp. n.

Fem. Subcylindrica, sat nitida, ferruginea vel picea, parce fusco-pilosa; fronte fortiter punctata; prothorace fere quadrato, dorso umbonato, posterius vage subtiliter punctato; elytris striato-punctatis, interstitiis singulis serie punctorum vix perspicuenda et posterius tuberculis parvis setiferis notatis, apice sat convexe declivi, infra acute carinato.

Long. 4 millim.

Female. Subcylindric, deep ferruginous or piceous, shining. Front scarcely convex, impressed on either side over the mouth, covered with large deep punctures, mostly longitudinal, and with a narrow irregular subcarinate line from the epistoma to the vertex, pubescence confined to the sides, the mouth thinly

ciliate; eyes small, deeply emarginate; antennæ testaceous-brown. Prothorax as long as broad, subquadrate, truncate at base, the hind angles obtusely rounded, the sides very slightly curved, widest behind the middle and narrowed towards the rounded anterior angles, apical border subtruncate; surface obtusely elevated in the middle, with erect pubescence round the sides and apex, asperate in front, its posterior half with fine scattered punctures, an indistinct median line and a shallow oblique fold extending inwards from each posterior angle, which is slightly thickened. Scutellum rounded triangular. Elytra one-half longer than the prothorax, their basal border a little wider and truncate; shoulders rounded, with no prominent callosity, sides feebly rounded and not narrowed towards the subcircular, carinate, apical margin; surface convex from base to apex, obliquely declivous behind, with scarcely impressed rows of shallow punctures, the sutural stria not deeper, the inner rows very slightly sinuate near the base, interstices flat, transversely subrugose, with irregular single rows of minute punctures, and behind the middle with small setigerous tubercles; declivity not very oblique, slightly flattened and impressed round the margin, the sutural striæ subimpressed, the punctures of the striæ dilated, the interstices subconvex. Underside ferrugineous or piceous, nearly glabrous, the last abdominal segment rather closely punctured; legs fusco-testaceous, the anterior tibiæ not very finely serrate.

Hab. Panama, Bugaba (*Champion*).

Two examples. This species resembles *X. princeps* in shape, but is much smaller, and the tubercles on the alternate interstices do not vary in size as in that species. It is also smaller than *X. grandis*, Eichh., with the prothorax less transverse, more distinctly narrowed in front, and much more finely punctured; the elytral declivity is much less oblique, and its striæ are finer and not distinctly impressed.

20. **Xyleborus quadratus,** sp. n.

Fem. Subelongata, cylindrica, ferruginea, parce pilosa; capite subtiliter punctato; prothorace quadrato, apice truncato, post medium nitido parce subtiliter punctulato; elytris versus apicem gradatim angustatis, striato-punctatis, interstitiis parce uniseriatim punctatis et in declivitate obliqua subtiliter tuberculatis.

Long. 3·6 millim.

Female. Rather elongate, cylindric, ferruginous, or somewhat testaceous. Front convex, very closely reticulate, with a median shining area bearing a few deep but fine punctures at the sides; pubescence rather long, scanty except round the mouth. Prothorax quadrate with rounded angles, the sides very obtusely rounded, the apex transverse in the middle; disc thinly pubescent, transversely and rather strongly elevated in the middle, its anterior half asperate, the posterior half very finely and sparsely punctate. Elytra a little more than half as long again as the prothorax, the sides nearly parallel to the middle, thence gradually and obliquely incurved to the apex; surface longitudinally convex, obliquely declivous from the middle, with weakly impressed rows of close strong punctures, the sutural stria not deeper; interstices flat, with single series of very fine punctures bearing scattered short erect bristles; declivity convex, not strongly margined below, with the rows of punctures impressed, but becoming confused and subrugose towards the tip, and with the interstices furnished with rows of small piliferous tubercles. Underside and legs testaceous or reddish; the tibiæ finely serrate.

Hab. Panama, Bugaba (*Champion*).

Two examples. This species is nearly allied to *X. adelographus*, Eichh., but, apart from the difference of colour (and it is impossible to tell whether these light-coloured *Xylebori*, if examined in a short series, may not really be immature), the elytra are relatively shorter and not parallel-sided for so great a portion of their length; seen from the side they present a distinct longitudinal curvature throughout; the teeth of the anterior tibiæ and the tubercles of the interstices are much finer. It is smaller

and more slender than *X. commixtus*, with no perceptible narrowing of the prothorax in front, with the elytra somewhat narrowed behind, the declivity quite convex, the sutural stria not impressed, and the interstices not elevated; moreover, the absence of the coarse punctures on the head at once distinguishes it.

21. **Xyleborus posticus.**

Xyleborus posticus, Eichh. Berl. ent. Zeitschr. 1868, p. 281 [1]; Rat. Tom. p. 353 [2].

Hab. MEXICO [2], Toxpam (*Sallé*), Almolonga (*Höge*); GUATEMALA, Senahu, Chiacam, and San Juan in Vera Paz, Cerro Zunil, San Lucas Toliman, Guatemala city, Capetillo (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).—VENEZUELA [1 2]; BRAZIL, Tejuca (*Clark*).

One of the commonest *Xylebori* in Tropical America. Resembling in general appearance the members of the group which includes *X. torquatus* and *X. affinis*, it can be distinguished from them at once by the subquadrate prothorax.

22. **Xyleborus costaricensis,** sp. n.

Fem. Elongata, subcylindrica, sat nitida, picea, parce fusco-pilosa; prothorace oblongo, apice rotundato, dorso medio umbonato, posterius parce punctato; elytris lineato-punctatis, interstitiis planis punctis raris piliferis notatis; declivitate valde obliqua, ad apicem subimpressa, infra marginata, subopaca, interstitiis æqualiter minute tuberculatis.

Long. 3·5 millim.

Female. Elongate, subcylindric, piceous, with thin fuscous pubescence. Front subelevated over the mouth, the elevation and a median space dull and impunctate, the sides with close deep piliferous punctures; eyes rather broad, with a narrow deep emargination; antennæ fusco-testaceous. Prothorax longer than broad, the hind border curved, its angles rounded, the sides slightly curved and not narrowed to the anterior third, the apex rounded; surface umbonate about the middle, the elevation not very transverse, asperate in front, with erect pubescence, somewhat shining behind, with a few irregularly disposed fine punctures. Scutellum obtuse triangular, shining, black. Elytra as wide as the prothorax and fully one-half longer, their base truncate, the shoulders rounded rectangular, their calli obsolete, the sides nearly parallel to the apical third, with very slight posterior amplification, thence gently curved and narrowed to the circularly-rounded apex; surface piceous-brown, subconvex from the base, becoming very obliquely and gradually declivous behind the middle, shining, with rows of rather remote, shallow punctures, interstices flat, subrugose, with remote piliferous punctures; declivity duller, flattened posteriorly, subimpressed near the acutely-margined apex on each side of the suture, the punctures of the striæ shining, the interstices with regular series of minute piliferous tubercles, the hairs fine and short. Underside piceous, subglabrous, the abdomen impunctate. Legs fuscous, the anterior tibiæ rather strongly dilated, with the superior border subangulate.

Hab. COSTA RICA, Volcan de Irazu (*Rogers*).

One example. In the structure of its elytra, but not of its prothorax, this species approaches those of Eichhoff's group ++, and occupies a somewhat intermediate position between it and group +++, which consists of species in which the prothorax is cylindric, with a strongly rounded apical border.

23. **Xyleborus imbellis,** sp. n.

Fem. Elongata, cylindrica, subnitida, dilute testacea, prothoracis apice nigricante, densius æqualiter pubescens; prothorace latitudine longiore, apice rotundato, dorso haud gibboso, posterius sat fortiter punctato; elytris illo sesquilongioribus, postice subangustatis, striato-punctatis, interstitiis irregulariter seriato-punctatis, apice oblique declivi, parum convexo, confuse punctato, inermi.
Long. 4·7 millim.

Female. Elongate, cylindric, moderately shining, pale testaceous-brown, with the extreme apical margin of the prothorax blackish, completely clothed with rather close fine suberect pubescence. Prothorax longer than broad, widest before the middle, narrowed and strongly rounded anteriorly, the apex a little more obtuse in the middle, the sides straight behind, the hind angles subrectangular, the base subtruncate; dorsum curved throughout from base to apex, slightly behind, strongly declivous in front, with the cephalic opening longitudinally oval and nearly horizontal, without trace of any gibbous elevation, thickly pubescent at the apex, more thinly behind, its anterior half with fine dense asperities, the hinder half with close strong punctuation, weaker towards the middle. Scutellum minute, rounded, infuscate. Elytra rather less than one-half longer than the prothorax, truncate at base, the shoulders rounded, the sides feebly curved throughout, widest before the middle, and very slightly narrowed posteriorly, apex rather abruptly and obtusely rounded; surface longitudinally convex, obliquely declivous behind the middle, with shallow irregularly punctured striæ; interstices flat, the inner ones with irregular double series, the outer ones with single series of finer piliferous punctures; declivity somewhat flattened, irregularly punctured, without trace of striæ or tubercles. Underside and legs light testaceous, pubescent; spines of the tibiæ strong, not numerous.

Hab. GUATEMALA, San Juan in Vera Paz (*Champion*).

One example. This species is exceptional in that the prothorax has no sign whatever of the usual median elevation, and the elytra are entirely without apical tubercles. The head in the type is completely retracted into the prothorax and cannot be described; nor can the structural characters be fully made out, but, as far as observable, they show no cause for separating it from this genus. The pubescence is dense and somewhat downy, resembling that of *X. pelliculosus*, Eichh., and some other Oriental species. I am inclined for the present to place it in the genus near the latter species.

24. **Xyleborus intersetosus,** sp. n.

Fem. Oblonga, cylindrica, piceo-fusca, pedibus testaceis, breviter erecte griseo-pilosa; prothoracis dorso ante medium transverse elevato, postice subopaco, sparsim piloso et minute punctato; elytris subparallelis, subtilissime lineato-punctatis, lineis brevissime, interstitiis longius uniseriatim setosis, horum setis e punctis subasperatis, post medium ex tuberculis parvis egredientibus.
Long. 1·8 millim.

Female. Oblong, cylindric, piceo-fuscous, the base of the prothorax and elytra a little lighter and more reddish, with short erect griseous pubescence. Front flattened, finely reticulate, punctured towards the sides, sparsely hairy, the mouth ciliate. Prothorax rather longer than broad, the sides slightly curved, but not narrowed from the base to the anterior third, the apex strongly rounded, the hind angles broadly and obtusely rounded, the base subtruncate; disc with a slight antemedian transverse subcarinate elevation, asperate in front, its posterior half obscurely shining, with a delicate reticulation and fine scattered piliferous punctures. Elytra as wide at base as the prothorax and one-half longer, with subrectangular shoulders, the sides subparallel, not narrowed behind, the apical margin strongly rounded; surface subcylindrical to the hinder third, thence obliquely declivous, moderately shining, with non-impressed rows of fine punctures bearing very short semi-decumbent hairs, interstices flat, with a single row each of larger erect setæ arising from small subasperate punctures, which become developed behind the middle into

small tubercles; declivity little convex, not margined below, with the interstices uniformly and rather closely tuberculate. Underside fuscous, the legs testaceous.

Hab. GUATEMALA, Tamahu in Vera Paz (*Champion*).

This little species, of which one example was captured by Mr. Champion, is readily distinguished from other Central-American forms by its small size, fuscous-brown colour, the alternate rows of longer and shorter hair on the elytra, and the uniform tuberculation of the interstices. Its nearest ally appears to me to be *X. seriatus*, Blandf., from Japan, a much larger insect and readily distinguished by the comparatively strong punctuation of the basal half of the prothorax and the elytra, which in *X. intersetosus* is so weak as to be with difficulty observable. The latter insect is the smallest *Xyleborus* with which I am acquainted, being as short as, and more slender than, the Japanese *X. minutus*, Blandf.

25. **Xyleborus cuneatus.**

♀. *Xyleborus cuneatus*, Eichh. Rat. Tom. p. 380[1].

Hab. GUATEMALA, Cerro Zunil (*Champion*).—COLOMBIA, Varinas [1].

Mr. Champion has taken a single example, which I refer provisionally to this species. The description corresponds so aptly as to make a separation impossible without seeing the type, which has not been procurable. In this example, however, the elytra are parallel-sided almost to the middle and cannot be said to be narrowed from the base, as in Eichhoff's description; the length, 2·4 millim., is also rather greater.

26. **Xyleborus morulus,** sp. n.

Fem. Elongata, cylindrica, sat nitida, parcissime pilosa, piceo-nigra, pedibus brunneo-testaceis; prothorace oblongo, apice rotundato, disco obsoletius transverse elevato, dimidia parte basali punctata; elytris subtilissime lineato-punctatis, stria suturali omnino non impressa, interstitiis rarius uniseriatim punctatis, 1° et 3° in declivitate obliqua tuberculatis.

Long. 3 millim.

Female. Elongate, cylindric, moderately shining, black, with a slight pitchy tinge on the elytra, with a few short hairs at the apex and sides of the prothorax and towards the apex of the elytra. Front subconvex, dull, subreticulate, strongly punctured, smoother, but scarcely elevated along the median line; the mouth fringed. Prothorax evidently longer than broad, widest at the base, hind angles obtuse, the sides subparallel to the middle, the apex strongly and regularly rounded; surface with a scarcely discernible antemedian transverse elevation, asperate anteriorly, its posterior half shining, evidently but not strongly punctured, with a median smooth line. Scutellum small, rounded. Elytra more than one-half longer than the prothorax and as wide at the truncate base, shoulders subrectangular, sides parallel, very slightly narrowed at the posterior third, the apex subcircularly rounded; surface cylindric, convexly declivous for the apical third, finely lineato-punctate, without a trace of striæ, interstices flat, subrugulose, with single series of less frequent punctures, larger and smaller in somewhat irregular succession, the larger punctures about equal to those of the principal rows, the smaller punctures microscopic; declivity convex and shining, rather irregularly and weakly punctured, with five setigerous tubercles on the first, and two to four on the third and outer interstices, the second very faintly impressed. Underside pitchy black; legs testaceous-brown.

Hab. COSTA RICA (*coll. Blandford*).

The single example of this species in my collection approaches *X. propinquus*, but is more elongate, darker, appearing black except in a strong light, and has no trace of impressed striæ, not even along the suture. I have not observed in any allied species the alternation in size of the interstitial punctures, which is readily appreciated with the aid of a microscope.

27. **Xyleborus intrusus,** sp. n.

Fem. Subelongata, sat nitida, parce breviter pilosa, ferruginea vel piceo-nigra; prothorace latitudine longiore, apice rotundato, dorso umbonato, posterius distincte punctato; elytris subparallelis, apice obtuse rotundatis et infra haud acute marginatis, striato-punctatis, interstitiis remotius uniseriatim punctatis, apice fortiter convexe declivi, subnitido, obsolete punctato, interstitiis 1° et 3° tuberculatis, 2° haud impresso.

Long. 2·7 millim.

Female. Cylindrical, rather elongate, moderately shining, ferruginous or piceous-black, with short thin erect pubescence. Front flattened, dull, with a narrow median supra-oral carina, subimpressed and punctured on either side, the punctures deep towards the vertex, pubescence almost absent except round the mouth; eyes broad, anteriorly emarginate; antennæ fuscous. Prothorax longer than broad, basal margin rounded, hind angles obtusely rounded, sides parallel to the middle, apex strongly rounded; dorsum elevated just before the middle into an obtuse non-transverse tubercle, thinly pubescent round the margins, anteriorly asperate, its posterior half with distinct punctuation, the median line impunctate. Scutellum rounded. Elytra scarcely as wide at base as the prothorax and about one-half longer, subtruncate at base, shoulders rounded, sides parallel and not narrowed behind, the apical margin rather abruptly and obtusely rounded, almost truncate; surface cylindric to the posterior fourth, then strongly and convexly declivous, becoming subvertical at the apex, moderately strongly and closely punctured, in rather regular shallow striæ, interstices narrow, with single series of remoter and finer piliferous punctures, the hairs short, becoming longer behind; declivity not sharply margined below, subnitid, indistinctly punctured and not striate, the first and third interstices with two or three rather small tubercles, the second not impressed. Underside concolorous, subglabrous; the abdomen punctate; legs fuscous.

Hab. Guatemala, San Gerónimo (*Champion*).

Three examples, one of which is ferruginous. This species is separable from its allies, which are of cylindrical form, with the prothorax oblong, and the first and third elytral interstices tuberculate behind, by the abruptly declivous and obtuse apex of the elytra. The striæ are more regular and finely punctured than in *X. torquatus*.

From *X. posticus* it is to be distinguished by the greater length of the prothorax, strongly rounded apical margin, the longer and more parallel-sided elytra, the deeper striæ and tuberculate declivity.

28. **Xyleborus propinquus.**

♀. *Xyleborus propinquus,* Eichh. Berl. ent. Zeitschr. 1868, p. 281[1]; Rat. Tom. p. 367[2].

Hab. North America[1], Tennessee[2].—Mexico, Jalapa (*Höge*); Guatemala, Chinautla (*Salvin*), San Gerónimo (*Champion*); Nicaragua, San Juan (*Sallé*).

The few specimens here associated vary a little among themselves, but have been carefully compared with a typical example. With the exception of a pair from San Gerónimo, we have received but a single individual from each locality. The infuscation

of the extremities of the prothorax and elytra, a marked feature of the type, is variable and not always present; the elytra are even more finely punctate and the striæ less impressed, but as there is some difference in these respects between individuals, it may be supposed that the type is rather more strongly sculptured than usual. It is also rather more pilose, a matter probably of condition.

X. propinquus may be separated from its neighbours, except *X. morulus*, by its darker colour, distinct punctuation of the basal half of the prothorax, the discal elevation of which is umbonate rather than transverse, the very fine punctures of the elytral rows, of which the sutural row only is distinctly impressed, and the finely punctate interstices.

X. propinquus does not appear to have been differentiated by North-American entomologists among the congeries of forms known as *X. pubescens*, Zimm. But it is open to conjecture whether Eichhoff's locality is correct, as much of his material seems to have been from old and therefore imperfectly-labelled collections. The thoracic punctuation separates it from *X. alternans*, Eichh., if that species be really distinct and not varietal.

29. **Xyleborus torquatus.**

♀. *Xyleborus torquatus*, Eichh. Berl. ent. Zeitschr. 1868, p. 146[1]; Rat. Tom. p. 378[2].
♀. ?*Xyleborus badius*, Eichh. Berl. ent. Zeitschr. 1868, p. 280[3]; Rat. Tom. p. 379[4].

Hab. MEXICO, Presidio (*Forrer*), Jalapa, Cordova (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*), Motzorongo in Vera Cruz (*Flohr*), Toxpam, San Andrés Tuxtla, Teapa (*Sallé*); BRITISH HONDURAS, Rio Hondo (*Blancaneaux*); GUATEMALA, Panima in Vera Paz, El Tumbador, El Reposo, Cerro Zunil, Zapote (*Champion*); NICARAGUA, Grenada (*Sallé*), Chontales (*Janson*); PANAMA, Tolé (*Champion*).—BRAZIL[1 2]; PERU[2]; ANTILLES, Cuba[1 2 4], Porto Rico[1 2].—MADAGASCAR[3 4]; MAURITIUS[3]; TAHITI[4]; JAPAN.

Under the above title are included two forms which Eichhoff treats as separate species. Possibly this is the case; typical examples of each can be readily recognized, and *X. torquatus*, when mature, is fuscous or piceous-red. This colour is never seen in examples outside Tropical America. It is between the light-coloured examples of *X. torquatus* and the typical form of *X. badius* that discrimination becomes so difficult. Eichhoff[4] gives the following characters by which to separate *X. badius*:—"Statura, magnitudine et sculptura *X. torquato* maxime similis, sed uti videtur constanter dilutius coloratus, totus ferrugineus vel ferrugineo-testaceus, elytris quamvis paullulum, tamen perspicue subtilius atque fere ad amussim punctato-striatis; interstitiis nonnihil latioribus, pro rata striarum principalium profundius necnon confertius seriatim punctatis, interstitio 2° in declivitate leviter impresso. Forte tamen mera varietas localitatis antecedentis. . . . ." These differences can only be relied on to separate well-marked examples. Light and dark forms are about equally common among the fifty or more Central-American examples before me, and after numerous attempts I have not been

able to distribute them satisfactorily. Whether there are two distinct species, or merely local races, is a point on which I express no more decided opinion than Eichhoff himself has done. All that can be asserted is that ordinary methods of discrimination between them are insufficient for complete separation.

Although Eichhoff has recorded *X. badius* as well as *X. torquatus* from Cuba [4], with this exception the former is entirely palæotropical, the latter neotropical; this seems to point to a real geographical distinctness, and perhaps to an error in the locality of the specimens said to come from Cuba. In that case all our specimens must be referred to *X. torquatus* alone.

Xyleborus torquatus, *X. badius*, *X. perforans* (Woll.) (=*X. kraatzi*, Eichh.), and *X. affinis*, Eichh., constitute a group of forms which in long series are found to be united by intermediates in the order named. At present I incline to the belief that the latter two are really distinct.

There is, after all, no reason whatever why each of these closely-allied races may not be a true species, as the known differences in habit seem to show, although individual examples cannot always be assigned to one form rather than to another.

30. **Xyleborus interstitialis.**

♀. *Xyleborus interstitialis*, Eichh. Rat. Tom. p. 375 [1].

Hab. Mexico [1]; Guatemala, Cerro Zunil (*Champion*).

I have seen no type of this species, but among the numerous specimens of *X. affinis* from Cerro Zunil I have found three which appear to be distinct and agree completely with Eichhoff's description of this species: "*X. affini* maxime similis et geminatus, sed angustior, elytris exacte in ordinem lineato-punctatis, interstitiis impunctis, lævibus; declivitate apicali convexiuscula, punctata, subnitida."

To this it may be added that the specimens referred to are darker than any examples of *X. affinis*, the elytra being piceo-ferruginous behind and having a few piliferous punctures on the alternate interstices, a feature mentioned by Eichhoff in his detailed description as occasionally present.

31. **Xyleborus catulus,** sp. n.

Fem. Cylindrica, subelongata, nitida, flavo-testacea, parcissime breviter pilosa; prothorace oblongo, apice rotundato, dorso ante medium subtransverse elevato, posterius obsolete punctato; elytris subparallelis, postice ad apicem oblique rotundatum angustatis, regulariter lineato-punctatis, interstitiis planis, hinc illius setis seriatis aspersis, 1° et 3° in declivitate convexa tuberculatis.

Long. 2 millim.

Female. Cylindrical, somewhat elongate, shining, yellow-testaceous, with very short scanty pubescence. Front somewhat flattened, punctate, the mouth fringed. Prothorax a little longer than broad, its basal margin slightly curved, the hind angles obtusely rounded, the sides subparallel to before the middle, the apex moderately strongly rounded; disc with an antemedian subtransverse elevation, asperate in front, its basal half shining, with indistinct sparse punctuation, the interspaces subreticulate. Scutellum small, triangular. Elytra scarcely as wide as the prothorax, and more than half as long again, truncate at

base, with the shoulders rounded, the sides subparallel to the middle, then gradually and obliquely rounded to the apex; surface cylindric, strongly and convexly declivous for the posterior third, subglabrous except on the declivity, with non-impressed rows of regularly-placed punctures; interstices flat, with a few setæ arising at rare intervals, the first and third with two or three small tubercles on the convex shining declivity, the second not impressed. Underside, antennæ, and legs pale testaceous.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

A single example has reached us of this slender little species. It is distinguishable from its allies by its small size, the very fine seriate punctures of the elytra, the subimpunctate interstices, and the obliquely narrowed apex, a feature which is very evident upon comparison with such a species as *X. affinis*. The declivous area begins farther back than in that species, and is quite regularly convex, without any striate impressions or strong punctures.

32. **Xyleborus affinis.**

♂ ♀. *Xyleborus affinis*, Eichh. Berl. ent. Zeitschr. 1867, p. 401[1]; Rat. Tom. p. 372[2].
Xyleborus perforans, Blandf. Kew Bull. nos. 67–68, p. 157 (1892)[3].
? *Xyleborus pubescens* (in parte), Zimm. Trans. Am. Ent. Soc. 1868, p. 145[4]; Eichh. Proc. U. S. Nat. Mus. xviii. p. 609 (1896)[5].

Hab. ? UNITED STATES [1 2 5].—MEXICO, Acapulco in Guerrero, Jalapa (*Höge*), Toxpam, Cordova, Vera Cruz (*Sallé*); GUATEMALA, Panima, Cubilguitz and San Juan in Vera Paz, Cerro Zunil, Las Mercedes, Zapote (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Tolé, Volcan de Chiriqui (*Champion*).—COLOMBIA[2]; BRAZIL[2]; PERU; ANTILLES, Cuba [1 2], Porto Rico, Barbados[3], St. Vincent[3], Nevis, Grenada, Tobago[3], Trinidad[3].—MAURITIUS[2].

We have numerous examples of this common and widely-distributed neotropical form, which attracted much attention a few years ago owing to its attacks on sugar-cane in various Antillean islands[3]. The Central-American specimens all belong to the typical form, separable from *X. torquatus* by the much finer elytral punctures and the very oblique declivity, which is dull and much more finely tuberculate.

In my report[3] on "Sugar-cane Borers in the West Indies," I treated this species as identical with *X. perforans* (Woll.), but in a later pamphlet, "Report on the Destruction of Beer-casks in India by the attacks of a Boring Beetle," London, 1893, pp. 46–47, I discussed the differences in greater detail, after the study of more material, and pointed out that the localities of the true *X. affinis* were neotropical, with the exception of Mauritius, and with the exception of Jamaica and the Amazons those of *X. perforans* were entirely palæotropical, but that examples were before me from Nevis, Trinidad, Porto Rico, and Ceylon which could not be positively referred to one or the other species; I also pointed out that the one male of *X. perforans* I had seen differed, though perhaps not materially, from the large number of male *X. affinis* I possessed. The specimens I have now examined from various localities amount to several hundreds,

and I am more strongly of opinion than before that, in this case at all events, where the differences are better marked than those between *X. torquatus* and *X. badius*, the inability to place certain individuals should not be held as a drawback to regarding the two forms as substantially distinct.

The existence of *X. affinis* in the United States is doubtful, and has given rise to some discussion. Eichhoff's original locality is given as the "United States or Cuba," which leaves the question open. At present it has not been clearly discriminated by American coleopterists from the other forms which are collectively known as *X. pubescens*, Zimm.[3] (see Blandford, Ent. News, 1898, pp. 3–5). The species which usually passes in North America as *X. pubescens* is *X. inermis*, Eichh.; this does not occur among our specimens.

33. **Xyleborus fuscatus.**

♀. *Xyleborus fuscatus*, Eichh. Berl. ent. Zeitschr. 1867, p. 400[1]; Rat. Tom. p. 386[2]; Zimm. Trans. Am. Ent. Soc. 1868, p. 145[3]; Lec. Rhynch. N. Am. p. 360[4]; Hubb. U. S. Dep. Agr. Bull. 7 (N. S.) 1897, p. 21, fig. 15[5].

♂. *Xyleborus planicollis*, Zimm. Trans. Am. Ent. Soc. 1868, p. 145[6].

Hab. NORTH AMERICA, Atlantic States[3 6], Carolina[1 2], Virginia to Texas[4].—GUATEMALA, Senahu in Vera Paz, El Tumbador, Guatemala city (*Champion*).—COLOMBIA[1 2].

Though no typical example has been accessible, it has been easy to identify the species from the description[2], and the examples taken by Mr. Champion, one at each locality, agree entirely with those sent me from West Virginia by Mr. Hopkins as Eichhoff's species. Eichhoff's description[2] contains an obvious mistake, not mentioned in the table of errata in his volume; compared with *X. confusus*, Eichh., *X. fuscatus* is said to be "magnitudine prope duplo minor." The sizes quoted (*X. confusus*, 2–3 millim.; *X. fuscatus*, 3 millim.) show this to be wrong. The latter insect is the larger and bulkier, and "duplo major" was probably intended.

The identification of *X. planicollis*, Zimm., as the male of this species has been made with tolerable certainty by Messrs. Hopkins and Schwarz, according to Hubbard[5], who states that the breeding-galleries are excavated in many kinds of trees, chiefly in oak, hickory, and perhaps other hard woods, and also in wine-casks.

34. **Xyleborus confusus.**

♀. *Xyleborus confusus*, Eichh. Berl. ent. Zeitschr. 1867, p. 401[1]; Rat. Tom. p. 385[2].

? *Bostrichus ferrugineus*, Boh. Kongl. Sv. Freg. Eugen. Resa, p. 88[3].

Xyleborus insularis, Sharp, Trans. Roy. Dubl. Soc. (2) iii. p. 193 (1885)[4].

Hab. MEXICO, Jalapa, Acapulco in Guerrero (*Höge*), Toxpam (*Sallé*), Yucatan[2]; BRITISH HONDURAS, Belize, Rio Hondo (*Blancaneaux*); GUATEMALA, Cubilguitz, La Tinta, Chacoj and San Juan in Vera Paz, Coatepeque (*Champion*); NICARAGUA,

Chontales (*Janson*); Panama, Tolé, Bugaba (*Champion*).—Venezuela [1 2]; Guiana [2]; Brazil [2]; Chili [1 2].—Antilles, Porto Rico [2], St. Vincent [2], Grenada (*H. H. Smith*), Trinidad.—Sandwich Islands [4].—Africa, Congo.—Madagascar [2].

A common species with an extended tropical distribution. The number of examples, however, obtained from Central America, does not exceed twenty. The species is of smaller average size than *X. fuscatus*, of lighter colour, and readily separable by the absence of the interstitial series of punctures on the elytra; the alternate interstices, however, show two or three setiferous punctures in some individuals. This species varies in size, in colour (a few examples in a series being more or less infuscate), and in the depth of the thoracic punctuation. As a rule, the basal half of the pronotum is smooth and scarcely visibly punctate, but the punctures are occasionally distinct; and one specimen from Chontales has that surface closely and rather strongly punctured, but conforms with the type in other respects. The inner interstices of the elytra present one to four minute tubercles, varying in number and size, just anterior to the declivity, which itself may be more or less evidently punctured, and impressed or not near the suture. The type of *X. insularis*, Sharp, from Kauai differs by no marked characters.

From the distribution of this species in Central America and its absence from many regions in Guatemala in which Mr. Champion collected extensively, one may conclude that it inhabits the sea-level and *tierra caliente*, not ascending over 2000 feet.

35. **Xyleborus declivis.** (Tab. VII. fig. 21.)

Xyleborus declivis, Eichh. Berl. ent. Zeitschr. 1868, p. 280 [1]; Rat. Tom. p. 401 [2].

Hab. Mexico, Teapa [1 2]; Guatemala, Las Mercedes, Zapote, Cerro Zunil (*Champion*).

Eight examples were taken by Mr. Champion. This species can be easily separated from others known from Central America, except the following, by its very glossy appearance and elongate form: the base of the prothorax is very finely punctured; the elytra are punctured in very regular fine rows, with almost impunctate interstices, their apex is oblique, flattened, and armed with four prominent tubercles placed as in *X. monographus* (Ratz.), or *X. celsus*, Eichh. The latter North-American species is larger, more exactly cylindrical, and has the interstices lineato-punctate.

36. **Xyleborus macer,** sp. n.

Elongatus, cylindricus, nitidus, parce pilosus, ferrugineus vel piceus; prothorace oblongo, posterius sat distincte parce punctato; elytris lineato-punctatis, interstitiis rarissime punctatis, apice oblique declivi, dentibus 4 majoribus præter suturam ornato.

Long. 3–3·6 millim.

Elongate, cylindric, shining, ferruginous, or piceous. Front dull and roughened, subconvex, fringed at the margins with long hairs; eyes rather coarsely granulate. Prothorax more than one-third longer than wide, parallel-sided or imperceptibly widened forwards from the truncate base, hind angles obliquely, the apex broadly rounded; surface indistinctly elevated at the anterior third, finely asperate in front, sparsely

but evidently punctured behind, a little closer around the median impunctate line, pubescence very scanty, erect. Elytra less than a half longer than the prothorax and a little narrower, paralled-sided to the posterior fourth, then slightly narrowed with the apex rounded, surface cylindrical, obliquely declivous behind, lineato-punctate, the punctures close, a little irregular posteriorly, the sutural stria slightly but evidently impressed; interstices flat, rather narrow, and almost impunctate, at the sides and apex with a few seriate bristles; declivity somewhat flattened and impressed along the suture, with the striæ obsolete, finely tuberculate in the line of the interstices, with two strong tubercles on each side of the suture, its surface finely and subrugosely punctured. Underside and legs ferruginous.

Hab. GUATEMALA, Zapote, El Tumbador (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Tolé (*Champion*).

This species, of which Mr. Champion took six and Mr. Janson two examples, is a close ally of *X. declivis* and *X. monographus*, Ratz., bearing the same relation to the former as the latter does to *X. celsus*. From *X. declivis* it is differentiated by its smaller size and less elongate elytra; it is not so shining, the prothorax is more distinctly punctured, and the rows of points on the elytra appear in a favourable light to be more impressed. From *X. monographus* it is separated by its more obliquely declivous elytra, the interstices of which are more shining and almost impunctate and hairless before the apex. In a single specimen from Zapote the elytra are relatively shorter and somewhat narrower; this is probably a male character, but there is no difference in the structure of the prothorax.

37. **Xyleborus guanajuatensis.**

Xyleborus (*Anæretus*) *guanajuatensis*, Dugès, Ann. Ent. Soc. Belg. xxxi. p. 140, t. i. figg. 11–22[1].

Hab. MEXICO, Guanajuato[1].

From Dugès's lengthy account of this insect, which is mainly descriptive of the early stages, the species appears to be a small *Xyleborus* of the *affinis* group. It cannot be identified from the description, which gives no reasons for adopting the provisional generic name, *Anæretus*, considerately proposed in case it should be required.

Subgroup III. HYLOCURI.

Hylocuridæ, Eichhoff, Rat. Tom. p. 298 (=*Micracides*, Leconte, Rhynch. N. Am. p. 367).

The Hylocuri are at once separated from the rest of the Tomicides by the six-jointed funiculus and mucronate elytra (not exhibited by *Thysanoes*). The single Central-American genus *Hylocurus* approaches closely to Leconte's genus *Micracis*. There is, however, some discrepancy about the characters of the latter, and they are given differently by Leconte and Eichhoff, who possibly had not seen an authentic example of Leconte's species. The scantiness of my material has not allowed me to make a close study of *Micracis* or to separate it from *Hylocurus*. Species I have seen are different in facies from those of the latter genus, and no such sexual characters as occur in *Hylocurus* have been described among them.

HYLOCURUS.

Hylocurus, Eichhoff, Berl. ent. Zeitschr. 1871, p. 133; Rat. Tom. p. 298.

The species of *Hylocurus* are readily recognized by the structure of the antennæ and legs, and the general facies. The antennæ have a rather short curved clubbed scape, a six-jointed funiculus, the joints of which are somewhat moniliform, the third to the sixth transverse and increasing moderately in thickness; the club is short-oval, compact, and shining, crossed by two curved fringed sutures. The tibiæ are narrow, slightly wider apically, the anterior pair unarmed, except for two short spines at the upper apical angle, the posterior pairs have an indistinct dilated lobe at the apex with traces of teeth; their outer face may be slightly scabrous and pubescent.

The body is cylindric; the prothorax as long or longer than broad, rounded at the apex, with an indistinct discal elevation, behind which it is usually subdepressed; its basal half is subopaque, reticulate, and more or less strongly granulate or punctate. The elytra are more or less strongly punctate-striate, the punctures often much dilated and cribriform posteriorly; at the apex they are produced into a common mucro, as in *Micracis*. The sexual differences in their structure are important and were not recognized by Eichhoff. In the male the interstices become subcarinate as they approach the declivity, round which they form a marginal series of short teeth, carinæ, or, in one species, acute spines, and they may be elevated above the general surface so that the sides of the elytra appear to diverge behind; the declivity itself may be convex, or retuse and nearly vertical, elevated near the suture alone, and it may be sculptured differently from the horizontal portion. In the female the elytra are regularly and strongly declivous behind, the declivity being convex, with no marginal tubercles round its upper border.

Some of the species are much alike in appearance and chiefly separable by the structure of the elytral apex. Eichhoff has described three, from Mexico, Venezuela, and Cuba. I add three others from Central America, and complete my account of these closely-allied and singular forms by a synopsis of all the species known to me:—

1. Elytral interstices elevated to form a marginal ring of spines, teeth, or tubercles round the declivity. (*Males.*) . . . . . 2.
   Elytral interstices gradually declivous at the apex. (*Females.*) . . . . 6.
2. The interstices uniformly toothed round the declivity . . . . . 3.
   The 3rd, 7th, and 9th intestices terminating in long acute spines . . . *spinifex*, sp. n.
3. Elytra dilated apically . . . . . 4.
   Elytra not dilated apically . . . . . 5.
4. Declivity oblique, convex, shortly pubescent, with four tubercles in the line of the third interstice . . . . . *cancellatus*, sp. n.
   Declivity subvertical, glabrous, with three tubercles in the line of the third interstice . . . . . *retusipennis*, sp. n.

	Declivity subvertical, squamous, with two tubercles in the line of the third interstice	*elegans*, Eichh.
5.	Declivity with three tubercles in the line of the third interstice	[*discifer*, Eichh.*]
	Declivity tuberculate along the suture alone	*alienus*, Eichh.
6.	Third and fifth elytral interstices not tuberculate at the apex	7.
	All interstices dull, rugose, uniformly seriato-tuberculate at the apex	*errans*, sp. n.
7.	Margins of the suture not tuberculate towards the apex	8.
	Margins of the suture tuberculate towards the apex	9.
8.	Elytra with strong crenate striæ, declivity lineato-punctate	*cancellatus*, sp. n.
	Elytra with rows of rather weak punctures, striate posteriorly, and obliterated on the declivity	*vagabundus*, sp. n.
9.	Elytral interstices convex throughout, the 3rd with four or more tubercles on the declivity	*simplex*, sp. n.
	Interstices flat, except towards the declivity	10.
10.	Declivous portion of the 3rd interstice with three tubercles	*egenus*, sp. n.
	Declivous portion of the 3rd interstice with two tubercles	*alienus*, Eichh.

1. **Hylocurus cancellatus,** sp. n. (Tab. VII. fig. 22, ♂.)

Cylindricus, subnitidus, parce pilosus, niger vel piceus; prothorace oblongo, dorso pone medium granulato, lateraliter rugose punctato; elytris fortiter crenato-striatis, striis posterius profundioribus.

Long. 2·6–3·1 millim. (♂ ♀.)

Mas. Prothoracis margine antico tuberculato; elytris postice dilatatis, circulatim retusis, interstitiis in ambitu retusionis tuberculato-carinatis, 3° in declivitate obliqua 4-tuberculato.

Fem. Prothoracis margine antico simplici; elytris ad apicem convexe declivibus, interstitio 3° ad apicem subtilius tuberculato.

Cylindric, moderately shining, black or pitchy-black. Front subconvex above, with close rugose punctuation, transversely subcarinate in the middle, the carina conjoined with an elevated smooth median line reaching the mouth; epistoma impressed on either side, bearing a tuft of fulvous hairs. Prothorax longer than broad, truncate at base, with the hind angles rounded; the sides (♂) nearly straight behind, incurved and slightly narrowed at the middle third, the apex broadly rounded, margined with small tubercles; sides (♀) more distinctly constricted in front, the apex more strongly rounded, not tuberculate: surface depressed behind an indistinct antemedian transverse elevation and subelevated at the base, rufescent and scantily hairy towards the apex, the anterior half asperate with small granules, closer and stronger in the male, the basal half rugosely punctate at the sides, finely granulate towards the middle, the granules weaker over the median line, the interspaces closely reticulate. Scutellum small, subtriangular, punctured. Elytra (♂) one-half longer than the prothorax and as wide at the base, their basal margins feebly rounded, the shoulders rounded, not callose, the sides straight, divergent, the hind margins oblique, straight, produced at the suture into a common mucro; surface cylindric, punctate-striate, the punctures deeply impressed, becoming very large and sometimes confluent behind, interstices narrow, convex, shining, with indistinct punctures, behind costiform, the costæ much broken and conjointed with the interspaces of the striæ to form an irregular elevated reticulum, their extremities forming a series of short angulate tubercles round the declivity, fringed with fine hairs; declivity oblique, convex, strongly punctured in substriate rows, the sutural interstice finely tuberculate, the third with four, the fifth with one or two pointed setiferous tubercles. Elytra (♀) relatively longer, glabrous, subparallel to the oblique rounded hind margins, the striæ less coarsely punctured, deeper before the declivity, which is strongly punctured but not striate, the interstices gradually declivous, the third and

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* I have not seen this Venezuelan species, which is placed by the published characters.

fifth with several small tubercles on the declivity, the second not smooth. Underside black or piceous, pubescent, middle segments of the abdomen strongly punctured.

Hab. GUATEMALA, Quiché Mountains (*Champion*).

Five specimens of this, the largest species as yet in the genus, were obtained.

2. **Hylocurus simplex,** sp. n.

Fem. Cylindrica, subglabra, picea; prothorace posterius granulato; elytris punctato-striatis, striis posterius haud profundioribus, punctis minus dilatatis; declivitate convexa, obsolete lineato-punctata, interstitiis 1°, 3°, 5° subelevatis tuberculatis, 2°, 4° planis, lævibus.

Long. 2·6 millim.

Female. Cylindric, moderately shining, piceous-brown. Front subconvex above, impressed over the mouth and thinly ciliate, with no elevated median line. Prothorax similar to that of *H. costellatus* (♀), the granules a little finer towards the base. Scutellum large, rounded, punctate. Elytra a little shorter in proportion, the sides more gradually rounded at the apex, which is less oblique and mucronate; surface with moderately strong punctured striæ, finer than in *H. costellatus*, the punctures not larger or deeper towards the apex; interstices narrow, convex, uniform before the declivity, with occasional punctures, and a few small piliferous tubercles at the summit of the apical flexure; declivity shining, with non-impressed rows of obsolete punctures, the sutural and third interstices elevated and finely tuberculate, the latter with four tubercles, the second and fourth flat and smooth, outer interstices tuberculate. Underside and legs piceous.

Hab. GUATEMALA, El Tumbador (*Champion*).

The one example I have seen might be mistaken at first sight for *H. cancellatus*, ♀, but the uniform striation of the elytra and the absence of evident punctures on the declivity will separate it.

3. **Hylocurus egenus,** sp. n.

Fem. Oblongo-cylindrica, sat nitida, ferruginea; prothoracis disco posterius subtiliter granulato; elytris punctato-striatis, punctis versus apicem dilatatis, interstitiis ante declivitatem tuberculatis; declivitate striato-punctata, interstitio 2° impresso, 3° elevato trituberculato.

Long. 2 millim.

Female. Similar to *H. simplex*, but twice as small, bright ferruginous, less elongate. Prothorax less narrowed anteriorly, more obtusely rounded at the apex, its margin crenate, granulation of the posterior half closer and finer. Elytra more obtusely pointed behind, the mucro shorter, the striæ with fewer, relatively coarser punctures, more dilated and quadrate posteriorly, interstices less convex, transversely rugulose; declivity striato-punctate, the sutural margins more raised, tuberculate, the second interstice impressed, the third with three tubercles stronger than those of *H. simplex*, the scattered apical bristles stouter and more conspicuous.

Hab. MEXICO, Motzorongo in Vera Cruz (*Flohr*).

One example. In the trituberculate third interstice this insect approaches *H. discifer*, Eichh., from Venezuela. But as that insect was described from a male example, no comparison is possible from the description alone, and I have not seen the type.

4. **Hylocurus elegans.**

Hylocurus elegans, Eichh. Berl. ent. Zeitschr. 1871, p. 134[1]; Rat. Tom. p. 299[2].

Hab. MEXICO, Teapa[1].

This species is not in our collection, but I have seen a typical specimen from that of Chapuis. It is a male, the female (and therefore the sexual differences) being unknown to Eichhoff. Closely resembling *H. cancellatus*, ♂, in general appearance, it is very much smaller, piceous-brown, and not blackish, and has the basal half of the prothorax punctate rather than granulate; the elytra are relatively shorter, the interstices less broken towards the declivity, round which they terminate in a series of short blunt teeth; the declivity is more abruptly truncate, nearly vertical, covered with scattered upstanding scales, somewhat irregularly punctured, with two tubercles only in the line of the third interstice. Length 1·6 millim.

The following species are all based on examples taken from the débris of tobacco-bales unpacked in Paris, and have been forwarded to me by M. Grouvelle. Their origin is probably Mexican, but it is doubtful in the case of one or two examples, which may be natives of San Domingo or Brazil. The types are in my collection.

Hylocurus retusipennis, sp. n.

Mas. Breviter cylindricus, subnitidus, niger, antennis pedibusque fusco-testaceis; prothorace postice punctato; elytris illo haud sesquilongioribus, postice dilatatis, striatis, striis grosse punctatis, interstitiis posterius carinatis et in dentes obtusos productis; declivitate circulatim retusa, glabra, in limbo superiore striato-punctata, punctis infra obsolescentibus, interstitio 3° trituberculato.
Long. 2 millim.

Male. Cylindric, short, moderately shining, black, the antennæ and legs brown-testaceous. Prothorax broadly rounded at the apex, without prominent tubercles, the dorsal elevation indistinct, rufescent, the surface slightly impressed behind it, subnitid and moderately closely punctured at the base. Elytra less than one-half longer than the prothorax, evidently widened towards the apex, the inferior margin of which is transverse rather than oblique, with a small excision on each side, and the sutural angle produced into a rather broad triangular mucro; surface strongly punctate-striate, the striæ deeper behind, the interstices shining, irregular, convex, carinate before the declivity and ending round its margin in a series of short obtuse teeth, bearing scattered squamiform hairs; retuse area vertical, circular, subopaque, glabrous, striato-punctate above, with the interstices elevated, obsoletely punctured below, without elevated interstices, the margins of the suture elevated and tuberculate throughout, the third interstice with three pointed tubercles. Underside black, the abdomen rather closely punctured.

Hab. ? Mexico.

I have one specimen from Mexican tobacco. The species is of the configuration of *H. elegans*, but larger, with the apical retuse surface glabrous and not squamous, duller and trituberculate on either side. In the latter point it approaches *H. discifer*, Eichh., but differs in having the elytra very markedly dilated towards the apex.

Hylocurus alienus.

♀. *Hylocurus alienus*, Eichh. Rat. Tom. p. 301 [1].

Mas. Cylindricus, nigro-piceus; prothorace latitudine longiore, ad basin granulato-punctato; elytris parallelis, punctato-striatis, punctis sat magnis dilatatis, interstitiis angustis, convexis, in tuberculos obtusos terminatis; retusione circulari, subobliqua, convexa, subopaca, in limbo superiore striato-punctata, sutura subelevata subtiliter tuberculata, lateribus muticis.
Long. 2 millim.

Male. Deep piceous, the prothorax between the discal elevation and the base, and the apical half of the elytra, blackish. Similar to the female in shape and sculpture except towards the apex of the elytra, which are not dilated posteriorly; the interstices not declivous behind, ending round the declivity in a series of blunt tubercles set with scattered setæ; declivity circular, convex, somewhat oblique, subopaque, with rather indistinctly impressed radial lines of punctures on its upper half, the sutural margins narrowly elevated and furnished with small seriate tubercles bearing subsquamous setæ, the rest of the surface not tuberculate.

Hab. ? MEXICO.—ANTILLES, Cuba [1].

I refer to this species three specimens probably from Mexican, perhaps from San Domingo, tobacco. The male can be separated from that of other species by the parallel elytra and the absence of lateral tubercles on the declivity.

Hylocurus errans, sp. n.

Fem. Cylindrica, subopaca, piceo-nigra, elytris piceis; prothorace superne ad basin crebre punctato; elytris cylindricis, haud profunde punctato-striatis, interstitiis angustis, transverse rugosis, punctatis, posterius tuberculis setiferis parvis uniseriatim ornatis; declivitate convexa, striata, interstitiis æqualiter tuberculatis, 2° 4° tamen abbreviatis.

Long. 2·6 millim.

Female. Cylindric, a little smaller and more slender than *H. cancellatus*, ♀, dull, piceous-black, the prothoracic elevation and the elytra (at least at the base) brown. Front flattened, subimpressed over the mouth, densely and rugosely punctured, with no median elevated line; antennæ fusco-testaceous. Prothorax a little narrower than in *H. cancellatus*, ♀, rather more evidently constricted in front; surface entirely dull, rough with rather fine granules, intermingled with scattered stronger ones over the anterior third, weaker about the middle, and gradually replaced towards the base by close shallow punctures. Scutellum large, obtuse triangular, punctured. Elytra more than a half longer than the prothorax, the sides parallel, gradually rounded behind into the oblique but rounded apical margins, the terminal mucro short, broad, and blunt; surface with close punctured striæ, rather deeper behind, crenate with large close shallow punctures; interstices narrow, convex, transversely rugose, with single series of small close tubercles beginning above the declivity, and carrying short setæ; declivity convex, more weakly striate, the interstices convex, continued to the apex and uniformly tuberculate, the second and fourth abbreviated by the union of the adjacent striæ, the interspaces dull, closely reticulate. Underside black; legs piceous, the tarsi lighter.

Hab. ? MEXICO.

I have four examples of this insect from tobacco. It requires careful discrimination from *H. cancellatus*, ♀, but can be distinguished by the shallower non-dilated punctures of the striæ, the more rugose and less shining interstices, and the opaque declivity, the interstices of which are evidently convex and the punctures finer.

Hylocurus vagabundus, sp. n.

Fem. Cylindrica, subelongata, subnitida, piceo-nigra, antennis pedibusque rufo-piceis; prothoracis basi subnitida, granulato-punctata; elytris striato-punctatis, striis in dimidia parte apicali solum impressis, interstitiis angustis, subrugosis, in declivitate convexa æqualiter subtiliter seriato-tuberculatis, 2°, 4° ante apicem abbreviatis.

Long. vix 2 millim.

Female. Cylindric, subelongate, piceous-black, the thoracic elevation, antennæ, and legs rufescent. Prothorax evidently longer than broad, widest at the base, the sides straight to before the middle, the apex broadly

rounded, the hind angles rectangular; surface very feebly elevated before the middle, subdepressed behind, its anterior half rather finely asperate, its basal half moderately shining, closely reticulate, with scattered subasperate punctures, absent over the middle line. Scutellum rather large, triangular, nearly smooth. Elytra fully one-half longer than the prothorax, the sides subparallel, with slight posterior ampliation, the hind margins obliquely rounded, the terminal mucro short and blunt; surface with punctured striæ, the punctures rather shallow, deeper posteriorly, the striæ not impressed before the apical half; interstices narrow, nearly flat, subrugose, finely seriato-tuberculate from behind the middle, the tubercles bearing short squamous setæ and uniform in size on the different interstices; declivity obliquely convex, with the striæ continued on to it, the 2nd and 4th interstices abbreviated before the apex.

Hab. ? MEXICO or BRAZIL.

I have one specimen of doubtful origin, either from Mexican or Brazilian tobacco. It is allied in sculpture to *H. errans*, but is a much smaller insect, with the elytral punctures not so large, dilated and shallow, the striæ not impressed for their basal half, the interstices more shining and less closely rugose.

Hylocurus spinifex, sp. n. (Tab. VII. fig. 23, apex of elytra.)

Mas. Breviter cylindricus, subnitidus, niger, antennis pedibusque fusco-testaceis; prothorace latitudine vix longiore, basi punctata; elytris cylindricis, ad apicem circulatim retusis, punctato-striatis, interstitiis 2° et sequentibus ad apicem carinatis et in spinas acutas productis, spinis 2ª, 6ª, 8ª in utroque latere longis, validis; fundo declivitatis infra prope suturam bispinato.

Long. 2–2·2 millim.

Male. Shortly cylindric, moderately shining, black, the antennæ and legs testaceous-brown. Prothorax about as broad as long, slightly constricted in front, the hind angles obtusely rounded, the sides feebly rounded behind, more strongly in front, the apex broadly rounded, its margin not tuberculate; surface with a median obtuse subtransverse rufescent elevation, granulate anteriorly, the granules small, with scattered larger ones, the basal third punctate, the punctures sparser towards the middle which is shining. Scutellum not large, rounded, punctate. Elytra less than one-half longer than the prothorax, not dilated posteriorly, moderately strongly punctate-striate, the punctures but slightly dilated and not confluent behind; interstices subconvex, shining, uniseriately punctured, with a few squamous setæ at their extremities, the first unarmed behind, the others furnished with acute backwardly-directed triangular spines round the margin of the declivity and radially flattened with respect to it, those of the 3rd, 7th, and 9th interstices very long and incurved, the remainder short; declivity subconvex, shining, strongly punctured, with a single spine on each side near the apex of the suture, the lower border bluntly toothed on each side of the short terminal mucro.

Hab. ? MEXICO.

Three specimens from Mexican tobacco-refuse are in my collection. The species is easily recognized by the elytral armature, which is quite different from that of any other species.

Subgroup IV. CRYPHALI.

This subgroup is represented in Central America by two cosmopolitan genera only.

CRYPHALUS.

Cryphalus, Erichson, Wiegm. Arch. 1836, i. p. 64; Eichhoff, Rat. Tom. p. 121.
Ernoporus, Thomson, Skand. Col. i. p. 147; vii. p. 360 (pro parte).

Though the genus *Cryphalus* is represented in the United States, no examples of it

have reached us from Central America; but the following species is almost certainly a native of that region.

1. Cryphalus jalapæ.

Bostrichus jalappæ, Letzn. Abh. schles. Jahrb. 1844 [1]; Arb. schles. Ges. 1848, p. 99 [2].
Cryphalus (*Ernoporus*) *jalapæ,* Ferr. Borkenk. pp. 12, 14, 16 (nota) [3].
Cryphalus jalappæ, Eichhoff, Rat. Tom. p. 134 [4].

Hab. ? Mexico [1 2 3 4].

This insect was originally found in Europe, boring into roots of Jalap (*Ipomœa jalapa* and *I. purga*) exported from Mexico. I am, however, not aware that it has ever been actually taken in that country. There is no sufficient reason for regarding *Ernoporus,* Thoms., as a genus distinct from *Cryphalus*; the distinctions between them tend to break down with the study of exotic forms.

HYPOTHENEMUS.

Hypothenemus, Westwood, Trans. Ent. Soc. Lond. i. p. 34 (1836); Leconte, Rhynch. N. Am. p. 355.
Stephanoderes, Eichhoff, Berl. ent. Zeitschr. 1871, p. 132; Rat. Tom. p. 142.
Homœocryphalus, Lindemann, Bull. Mosc. 1876, 2, p. 168 (pro parte).

Hypothenemus is closely allied to *Cryphalus,* of which it is regarded by certain writers as merely a subgenus. Beyond general appearance, I know of no constant character to distinguish them. Normally, the funiculus is 5-jointed in *Hypothenemus,* 4-jointed in *Cryphalus.* But the joints are four in number in the species on which Lindemann founded his genus *Homœocryphalus,* and according to Leconte they vary from three to five in the American species. Westwood gives three as the number in *H. eruditus,* and I cannot make out more in one of his typical examples examined without special preparation. In a specimen from Nevis I have found four, but to resolve them required the mounting of the antenna in balsam, and an amplification far beyond any that is usually employed by micro-coleopterists. Clearly the number of joints is not in this case a good generic character. As referred to in the introduction (*anteà,* p. 81), Lϕvendal has shown that in *Dryocœtes* (*Lymantor*) *coryli* the fifth joint of the funiculus is more or less fused with the club, and he has informed me that there may be more or less coalescence of the two funicular joints in *Crypturgus.* Something of the same sort is to be found in various Corthyli; and the phenomenon is therefore not unprecedented.

Eichhoff (Proc. U. S. Nat. Mus. xviii. p. 608) insists that Westwood's name is untenable because the genus is founded on one non-existent character, and that *Stephanoderes* must take its place. There is no reason whatever for disbelieving Westwood's statement that the funiculus is three-jointed—as far as the example he

dissected was concerned. Even if the character is not diagnostic, the genus was well founded and unmistakably distinct at the time it was adopted, and may as justly be retained as certain named and undescribed genera of Erichson's have been. In this respect it is in a different position from *Monarthrum*, Kirsch.

The species of *Hypothenemus* are common in the tropics, but are little more than stragglers in temperate countries, to which they are frequently imported in seeds, &c. They are among the most difficult of Scolytidæ to distinguish or identify, a task that is almost impossible unless the examples are in good condition and not rubbed, as is often the case. We have received very few, though it is almost certain that a large number must exist within our limits.

1.	Apical margin of the prothorax with two prominent tubercles	2.
	Apical margin of the prothorax with several small tubercles	3.
2.	Front of the prothorax with a narrow patch of a few large tubercles . .	*erectus*, Lec.
	Front of the prothorax with a wider patch of numerous moderate-sized tubercles	*validus*, sp. n.
3.	Prothorax and elytra densely clothed	4.
	Prothorax and elytra subglabrous	*lævigatus*, sp. n.
4.	Elytra rather strongly striate	5.
	Elytra finely striato-punctate	6.
5.	Form broad oblong, with short stiff setæ	*plumeriæ*, Nördl.
	Form narrow, subelongate, pulverulent	*pulverulentus*, Eichh.
6.	Prothorax uniformly convex, colour pitchy-black	*germari*, Eichh.
	Prothorax nodose in the middle, rufo-testaceous, rarely infuscate . . .	*eruditus*, Westw.

1. Hypothenemus erectus.

Hypothenemus erectus, Lec. Rhynch. N. Am. p. 356 [1]; Eichh. Proc. U. S. Nat. Mus. xviii. p. 608 (1895) [2].

Stephanoderes sculpturatus, Eichh. Rat. Tom. p. 146 [3].

? *Stephanoderes rotundicollis*, Eichh. Rat. Tom. p. 145 [4].

? *Cryphalus striatulus*, Mann. Bull. Mosc. 1853, p. 235 [5] (apud Eichh. Rat. Tom. p. 147 [6]).

Hab. North America [3 4], Tennessee [2], Texas [1].—Mexico, Colima city (*Höge*); Guatemala, San Gerónimo (*Champion*).

Although I have not seen a typical example of this species, I refer to it two specimens received by us, because they differ from *H. dissimilis* (Zimm.) (=*S. chapuisi*, Eichh.) exactly as *H. erectus* is said by Leconte to differ—that is, the seriate hairs on the elytral interstices are replaced by very short hispid scales. Whether *S. rotundicollis*, Eichh., apparently described from a unique example [4], be really distinct, seems problematical.

Cryphalus striatulus, Mann. [5], was conjecturally identified by Eichhoff [6] with the present species; it was founded on a single specimen from Alaska, and has not been recognized by later writers.

2. **Hypothenemus validus,** sp. n.

Oblongus, subnitidus, niger, prothorace amplo, transverso, apicem versus subconstricto, disco medio nodoso, anterius tuberculis sat frequentibus ornato, margine antico bituberculato; elytris punctato-striatis, interstitiis subconvexis, irregulariter subbiseriatim setis brevibus instructis.

Long. 2 millim.

Among the largest species of the genus; oblong, robust, slightly shining, black. Front moderately shining, subconvex, rather strongly punctured, thinly pubescent, with indications of a median tubercle; antennæ testaceous, basal suture of the club transverse, the second curved. Prothorax transverse, subhemispherical, widest before the base, very slightly constricted anteriorly, the sides and apex conjointly rounded, the hind angles obtuse, the base subbisinuate; disc ample, sprinkled with short fuscous-grey subsquamous hairs, with a well-marked nodose elevation in the middle, in front furnished with twenty or more rounded tubercles not extending to the sides, becoming closer and smaller towards the elevation, but not confluent nor forming transverse ridges, the anterior pair situated on the apical margin; posterior half laterally subimpressed, uniformly and closely granulate-punctate. Scutellum transverse, triangular, subrugose. Elytra narrower than the greatest width of the prothorax and more than one-half longer, their basal borders slightly curved, the shoulders obtuse, the sides subparallel to beyond the middle, thence rounded to the apex; surface with rather shallow punctured striæ, rather deeper behind, the interstices very slightly convex, not more so laterally, finely punctured in irregular rows, tending to become double, and bearing short blunt cinereous subsquamiform setæ. Legs testaceous-brown, the femora usually infuscate.

Hab. MEXICO, Motzorongo in Vera Cruz (*Flohr*).

One specimen. I have numerous others from tobacco-refuse. The species is nearly allied to *H. opacus* (Eichh.), and is perhaps a mere variety. The examples before me differ from my solitary authentic specimen of that insect in their darker colour, and in the distinct nodose elevation of the disc of the prothorax, together with the much more prominent tubercles of its anterior portion. The elytral striæ are also less impressed; the interstices are more shining (where rubbed) and less convex, particularly towards the sides, and their rows of setæ are less regularly uniseriate.

3. **Hypothenemus germari.**

Stephanoderes germari, Eichh. Rat. Tom. p. 159[1].

Hab. MEXICO[1 2].

I have not seen any typical example of this species, and cannot identify it among our few unidentified *Hypothenemi.*

4. **Hypothenemus pulverulentus.**

Stephanoderes pulverulentus, Eichh. Berl. ent. Zeitschr. 1871, p. 133[1]; Rat. Tom. p. 161[2].

Hab. MEXICO[1 2].

This species is quite unknown to me.

5. **Hypothenemus plumeriæ.**

Bostrichus plumeriæ, Nördl. Nachtr. zu Ratz. Forstins. 1856, p. 74[1].

Stephanoderes plumeriæ, Eichh. Rat. Tom. p. 164[2].

Hab. MEXICO, Teapa[2]; GUATEMALA, near the city, Zapote (*Champion*).—VENEZUELA[1]; BRAZIL, Bahia[2]; ANTILLES, San Domingo[2].

An example of this species from Teapa, named by Eichhoff, is apparently conspecific with two specimens from Guatemala. The species is very closely allied to *H. seriatus* (Eichh.), and is perhaps hardly distinct. The characters, such as they are, which differentiate it will be found in Eichhoff's description. *H. plumeriæ* is twice the size of *H. eruditus*, of a uniform fuscous-black or brownish colour, broader, the elytra with impressed striæ of strong close punctures, the sutural stria rather deeper, the interstices subconvex.

Nördlinger's original examples were found under the bark of logs of *Plumeria alba*, imported from Venezuela.

6. **Hypothenemus eruditus.**

Hypothenemus eruditus, Westw. Trans. Ent. Soc. Lond. i. p. 34, t. 7. figs. 1 *a–g* (1836) [1]; Ferr. Borkenk. p. 7 [2]; Sharp, Trans. Ent. Soc. Lond. 1879, p. 102 [3]; Fauv. Rev. d'Ent. iii. pp. 315 and 390 [4]; Reitt. Bestimmungs-Tab. der Borkenk. 1894, p. 75 [5]; Blandf. Ins. Life, vi. p. 262 [6]; Eichh. Proc. U. S. Nat. Mus. xviii. p. 608 [7].

? *Bostrichus areccæ*, Horn. Stett. ent. Zeit. 1842, p. 117 [8] (nec Reitter [5]).

Stephanoderes areccæ, Eichh. Rat. Tom. p. 165 [9].

Bostrichus boieldieui, Perroud, Ann. Soc. Linn. Lyon, 1864, p. 188 [10].

Hab. Mexico, Teapa [9]; Panama, Bugaba (*Champion*).—Antilles, Nevis [6].—Europe (introduced) [1].—Africa, Guinea [9]; Sandwich Is. [3]—New Caledonia [10].

I refer to this species five examples of a *Hypothenemus* taken by Mr. Champion at Bugaba, seeing no justification for separating them. It is, nevertheless, noticeable that the prothorax is testaceous-red in one example only, while it is deep fuscous in three, and sordid testaceous-brown in the fifth, which is somewhat immature. The first-mentioned example is the largest, and measures 1·1 millim.

Much difficulty attends any attempt to disentangle the synonymy and thereby to fix the distribution of this tiny insect. It has an aptitude for being transported in articles of commerce, and probably ranges throughout the greater part of the tropics. In fact, the distribution given here is capable of being greatly extended by the inclusion of localities at which occur forms that are probably, though not certainly, to be referred to this species.

It was originally taken abundantly by Westwood [1] in England, burrowing in the cover of a book of unknown antecedents, and years later was captured again by the late E. W. Janson under similar circumstances. I have examined specimens from both these batches.

Hornung's specimens [8] came from the seeds of *Areca catechu*, and were presumably of Oriental origin, and I myself have examples from Java which are too rubbed to be positively referred to this species, but do not differ from it in any ascertainable way.

Eichhoff's *Stephanoderes areccæ* [9] is clearly identical with Westwood's species. This was pointed out by M. Fauvel [4], and has been confirmed by myself by comparing

a Teapa example named by Eichhoff with specimens of Westwood's. The identity of Hornung's species with *H. eruditus* is regarded as doubtful by Herr Reitter [5], to whom I sent a couple of Westwood's examples. This must mean that Eichhoff had applied the name *areccæ* to a species that was not Hornung's. The only difference on which Herr Reitter (who does not say he has seen Hornung's specimens) seems to rely is that of colour, Hornung having described his insects as red-brown, whereas *H. eruditus* typically has the elytra black and the prothorax red-testaceous. Eichhoff [9] mentions that two examples of Hornung's in his possession do not differ from his own except in colour. If Hornung's species had been entirely black, the difference would have been of more importance. The identity of Perroud's species has been definitely settled by M. Fauvel.

In North America *H. hispidulus*, Lec., has been generally regarded by recent writers as a synonym of this species. This is, however, looked upon as doubtful by Eichhoff [7], who points out that Leconte's description does not entirely apply. I have not myself seen an authentic specimen of *H. hispidulus*, which Eichhoff thinks may be the same as *Bostrichus crudiæ*, Panz. The figure and description of the latter insect would apply to more than one species of *Hypothenemus*, and the name cannot now be revived unless Panzer's specimens are recoverable.

Dr. Sharp [3] suggests that *Cryphalus aspericollis*, Woll., is a variety of the present species. This is not impossible, but requires proof. On the other hand, *Stephanoderes seriatus*, Eichh., is, on the authority of a typical example, clearly distinct.

I have recorded the attacks of *H. eruditus* on the young leaves of sugar-cane in Nevis [6]. In the United States *H. hispidulus* has been found in the stems of vines, honeysuckle, and orange, in old cotton-bolls, dried-up figs, pomegranates, &c.

7. **Hypothenemus lævigatus**, sp. n.

Oblongus, sat nitidus, parce pilosus nec squamatus, fusco-piceus vel fusco-ferrugineus, antennis pedibusque testaceis; prothorace antice tuberculis sat magnis exstructo, margine apicali tuberculato; elytris lineato-punctatis, linea suturali solum profunde striata.

Long. 1·5–2 millim.

Oblong, rather shining, fusco-piceous or fusco-ferruginous, with the antennæ and legs testaceous; glabrous above, except for a few short erect setæ on the extremities of the prothorax and elytra. Front subconvex, rugosely punctured, pubescent; eyes oblong-oval, rather sharply emarginate; funiculus 5-jointed, club suborbicular, with indistinct slightly curved sutures. Prothorax as long as broad, the sides slightly curved from the base to the anterior third, obliquely narrowed and subconstricted in front, the anterior margin much rounded in the middle, and furnished with six or more prominent tubercles, hind angles rounded, the base subtruncate, indistinctly bisinuate and very finely margined, flanks rather deeply impressed behind and finely margined below the hind angles; surface with a well-marked transverse median elevation, rather strongly declivous in front, and asperate with strong tubercles, forming an anterior row concentric with the margin, and finer and confused posteriorly, its hinder half impressed on each side, smooth and shining over the middle, laterally with a few piliferous punctures. Scutellum triangular, punctured. Elytra scarcely so wide as the prothorax, less than one-half longer, subtruncate at the base, with obliquely-rounded shoulders, the sides widest about the middle, gradually incurved behind, the apical margin subcircularly rounded; surface anteriorly cylindrical, declivous and convex

from the middle, lineato-punctate, with a single deep subsutural stria on each side, punctured towards the base alone; interstices alutaceous, impunctate, with a few setæ on the declivity, which has the second row of punctures striate at the apex. Underside fusco-piceous, the anal aperture ventral; tibiæ linear, with a few small marginal teeth.

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Los Remedios (*Champion*).

We have a pair from Bugaba and a single specimen from Los Remedios, and from these the description has been drawn up; they measure 2 millim. in length. The Chontales example is only half the size (length 1·5 millim.), more ferruginous, with the prothorax shorter, less constricted, more obtuse at the apex, the tubercles weaker; the elytra more parallel-sided, the sutural stria shallower, the bristles fewer and very short. The complete absence of scales and the paucity of hairs give this species a different aspect from that of most *Hypothenemi*, with which, however, it conforms in structure and shape.

Subgroup V. PITYOPHTHORI.

Pityophthoridæ, Eichhoff, Rat. Tom. p. 210 (pro parte).

The Pityophthori, as here defined (*anteà*, p. 185), include certain small Tomicids with a 4- or 5-jointed funiculus, a simple antennal club with transverse or curved sutures, slender tibiæ, non-retractile tarsi, and an elongate or subelongate body, without any dense vestiture of hairs or scales. These characters do not indicate a well-defined aggregate; and the four genera from Central America, here included in the group, have possibly not much in common. It has, however, proved difficult to separate them on precise and easily ascertainable characters.

Basal half of the prothorax distinctly granulate, except sometimes over the middle line, not bordered basally.

Antennal funiculus 5-jointed; club acuminate-ovate, the second joint large, sutures strongly curved. Superior border of the tibiæ with several weak teeth . . . . . *Styphlosoma.*

Antennal funiculus very short, 4-jointed; club oval, flattened, with transverse sutures. Superior border of the tibiæ with two teeth only . . . . . *Dendroterus.*

Basal half of the prothorax simply punctured or smooth; rarely finely granulate, in which case it is bordered basally.

Sutures of antennal club transverse, rarely curved, not fringed with long setæ. Prothorax more or less distinctly bordered at base. Form not very elongate. Punctuation of prothorax or elytra, or both, usually more or less distinct. Species (so far as known) phlœophagous, with the maxillæ set with stout spines . . . . . *Pityophthorus.*

Sutures of antennal club curved, with rather longer setæ. Prothorax not bordered at base. Form elongate, subcylindrical. Punctuation of prothorax and elytra very fine and obsolescent, their surface more or less alutaceous. Species xylophagous, with the maxillæ set with slender setæ. *Gnathotrichus.*

Although the differential characters above given do not distinguish *Pityophthorus*

and *Gnathotrichus* satisfactorily, the species of the two genera are quite distinct in facies; and, as before mentioned (*anteà*, p. 184), the genera are widely, and perhaps properly, separated from each other by Eichhoff.

STYPHLOSOMA, gen. nov.

Funiculus antennarum 5-articulatus; clava acuminato-ovalis, compressa, 3-articulata, articulo 2° magno, suturis 1ª et 2ª valde curvatis. Prothorax postice subparallelus, dense granulatus; prosternum processu angusto. Tibiæ lineares, anticæ oblique truncatæ; tarsi breves, articulis 1–3 æqualibus. Corpus breviter cylindricum. Elytris dense punctato-rugosis.

Head retracted. Antennal scape short; funiculus 5-jointed, scarcely wider apically; club acuminate-oval, compressed, triarticulate, the sutures alone shortly pubescent, the first joint forming the basal third and separated by a curved suture from the second joint, which is very large and embraces the third, except its extreme margins. Prothorax short, cylindrical, in front rounded and rather strongly declivous, without elevated side or basal margins, entirely granulate; prosternum short, with a narrow intercoxal process. Elytra cylindrical. Tibiæ narrow, feebly toothed, the anterior pair obliquely truncate at apex; tarsi short.

This genus is established for a single species, which has somewhat the appearance of a *Hypothenemus*, but differs in the structure of the antennal club, the more cylindrical prothorax and elytra, and the sculpture. Founded on a unique example, it is placed provisionally between the Cryphali and *Pityophthorus*.

1. **Styphlosoma granulatum,** sp. n. (Tab. VII. fig. 24, antenna.)

Oblongum, cylindricum, subopacum, niger, antennis et pedibus testaceis; prothorace subquadrato, apice rotundato, dorso medio vix elevato, per totum dense granulato; elytris punctato-striatis, interstitiis angustis, dense rugose punctatis et squamulis uniseriatim ornatis, apice fortiter declivi, præter suturam impresso, interstitio 2° haud squamulato.

Long. 1·7 millim.

Oblong, cylindrical, rather dull, black, the antennæ and legs testaceous. Head finely reticulate, the front subconvex, glabrous, closely and rugosely punctate, with a transverse carina below the middle; mouth rufescent, fringed; eyes oval, emarginate. Prothorax as long as broad, nearly parallel-sided from the base to the anterior third, obtusely rounded in front, the hind angles rectangular, the base truncate; surface convexly declivous in front, cylindrical behind, transversely but indistinctly elevated in the middle, closely granulate, the granules a little coarser over the apical portion; pubescence scanty, extremely short. Scutellum small, rounded, punctured. Elytra as wide as the prothorax and one-half longer, truncate at base, the humeral angles rectangular, the sides parallel, slightly narrowed towards the obtusely rounded apex; surface cylindrical to behind the middle, thence convex and strongly declivous, very closely and rugosely punctured, the striæ somewhat impressed, the interstices narrow, flat, set with single series of small whitish scales, the series separated from each other by two rows of small, pale, decumbent setæ, somewhat irregular towards the apex; declivity nearly vertical below, impressed at the apex of the suture as far as the 3rd interstice, extremity of the 2nd interstice without scales. Underside black, rather strongly punctured.

Hab. Panama, Bugaba (*Champion*).

One example.

DENDROTERUS, gen. nov.

Funiculus antennarum perbrevis, 4-articulatus, articulis 2–4 transversis; clava sat magna, breviter ovalis, compressa, 3-articulata, suturis transversis, piliferis. Tibiæ angustæ, supra dentibus 2 armatæ, ad apicem oblique truncatæ; tarsi breves, articulis 1–3 æqualibus.

Head deflexed, not subrostrate. Antennal scape short, curved, little thickened apically; funiculus very short, 4-jointed, the first joint cupulate, the second conical, the third and fourth transverse, successively wider; club short-oval, flattened, shining, 3-jointed, the joints successively shorter, sutures transverse, fringed. Prothorax longer than broad, without basal margin, its anterior ventral border not reaching the closely approximate front coxæ. Metathoracic side-pieces linear. Abdomen rather short, the third and fourth segments respectively shorter than the others. Tibiæ narrow, a little wider apically, upper margin with two small teeth; apex truncate, its lower angle shortly spined. Tarsi short, their first three joints equal, the fifth nearly as long as the others together.

This genus is established for two species which resemble a *Dryocœtes*, but differ in the structure of the antennæ and legs. The joints of the funiculus are difficult to separate even with a high magnification; and as each species is represented by a single example, the mouth-parts have not been examined.

1. **Dendroterus mexicanus,** sp. n. (Tab. VII. fig. 25.)

Oblongus, subnitidus, piceo-ferrugineus, pallide pilosus, antennis pedibusque testaceis; prothorace semielliptico, latitudine longiore, medio obtuse transverse elevato, granulato, linea media prope basin lævi; elytris grosse lineato-punctatis, interstitiis subæqualiter seriato-punctatis, apice subdeplanato, margine postico obtuso.

Long. 2·3 millim.

Oblong, slightly shining, piceo-ferruginous. Front flattened, rugose and densely villous; eyes emarginate-oval; antennæ testaceous-brown. Prothorax longer than broad, widest towards the base, the sides and apex subelliptically curved, the hind angles subrectangular, the base truncate; disc with an obtuse transverse median elevation, granulate except over the basal half of the median line, more strongly towards the apex, the pubescence short, scanty. Scutellum small, rounded. Elytra as wide as and a third longer than the prothorax, with rounded-rectangular and slightly callous humeral angles, the sides subparallel, the hind margin subtruncate, its lateral angles rounded; surface with rows of coarse punctures, the sutural row scarcely impressed, the interstices narrow, flat, subrugose, with single rows of less frequent but scarcely finer setiferous punctures; declivity convex above, almost vertical and somewhat flattened below, strongly punctured. Underside black, pubescent. Legs testaceous.

Hab. MEXICO, Tehuantepec in Oaxaca (*Höge*).

A single example has been obtained. The elytral punctures are coarse, deep, and not close, so that the distinction between those of the striæ and interstices is not readily noticeable. The frontal villosity is, no doubt, a sexual character.

2. **Dendroterus sallæi,** sp. n.

Oblongus, subnitidus, testaceus (?subimmaturus); prothorace semielliptico, granulato, linea media nulla; elytris fortiter punctato-striatis, interstitiis angustis, subconvexis, seriatim setosis, apice fortiter declivi, subconvexo, margine postico rotundato.

Long. 1·9 millim.

Oblong, stout, slightly shining, testaceous (perhaps immature). Front impressed, set with rather close, erect, pale pubescence. Prothorax scarcely longer than broad, slightly but perceptibly narrowed in front, with less trace of the discal elevation than in *D. mexicanus*, its surface completely granulate, with no median

line, the granules stronger and more asperate towards the apex and arranged in concentric lines. Scutellum rounded, infuscate. Elytra less than a half longer than the prothorax, less parallel-sided, more gradually rounded at the apex than in *D. mexicanus*, with striæ of close and moderately strong punctures, the sutural stria distinctly, the others feebly impressed; interstices narrow, slightly convex, with very fine uniseriate punctures bearing short suberect setæ; the hinder third strongly declivous, but not evidently flattened, shining, with the punctures weaker and the interstices feebly tuberculate. Legs and antennæ pale, constructed as in the preceding species.

Hab. Mexico, Vera Cruz (*Sallé*).

One specimen; easily distinguished from *D. mexicanus* by its smaller size and different elytral sculpture.

PITYOPHTHORUS.

Pityophthorus, Eichhoff, Berl. ent. Zeitschr. 1864, p. 39; Rat. Tom. p. 173; Leconte, Rhynch. N. Am. p. 349 (pars).
Crypturgus, Zimmermann, Trans. Am. Ent. Soc. 1868, p. 142 (pars).
Cryphalus, Leconte, Trans. Am. Ent. Soc. 1868, p. 153 (pars).

The genus *Pityophthorus* is one of the richest of Tomicid genera, being surpassed in this respect only by *Xyleborus*. The species extend over Europe and N. Asia, Japan, North and South America, and Madagascar. At present North America contains the majority of those described, the number, after excluding certain forms which are more properly to be referred to other genera, amounting to more than twenty.

Several species have been independently described by Eichhoff and by American zoologists under separate names. The synonymy thus caused has been much reduced by a collation made by Eichhoff, and published after his death (Proc. U. S. Nat. Mus. xviii. p. 609); but it is to be regretted that he did not accompany it with a full list of the species submitted to him and a statement as to which forms of Leconte and others (authentically named) he accepted as good species distinct from his own.

It is most difficult to identify specimens of this genus without comparison with types, and as I have seen and compared less than half the North-American forms, I may have put forward some synonyms in the following pages. The examination and description of the Central-American *Pityophthori* were done by me some years ago, and in revising for press I have re-examined them with a view to reducing the number of species, but, except in one instance, I have been unable to do so, although I do not regard my results, based usually on short series or single examples, as wholly satisfactory. I describe or enumerate eighteen species, and have in addition left some half-dozen specimens unidentified.

In *Pityophthorus* the antennal club is somewhat variable; usually it is oval or oblong-oval, clearly articulate, with nearly transverse sutures visible on both sides. Exceptionally the basal suture alone is visible (as in *P. xylotrupes*, Eichh.); in *P. incompositus*, *P. incommodus*, and their allies the club is larger, suborbicular, with strongly curved sutures. The prothorax is always bordered at the base. The apex of the last

ventral segment is more or less excised subcircularly, the pygidium being declivous, more or less reflexed, and visible from below. This, on careful examination, appears to be a constant character, more evident in some species than in others; but the degree to which it occurs cannot be sufficiently defined to be of use in differentiation.

The majority of the species are conifer-feeders, but in North America certain kinds have been found to breed in *Quercus*, *Liquidambar*, and *Rhus*.

Leconte included in *Pityophthorus* the N.-American species of *Gnathotrichus* and *Pityogenes*. These have since been excluded by American entomologists, but the genus thus restricted appears yet to be capable of further division.

In those species with lineato-punctate elytra belonging to Leconte's group C of which the sexes have been examined by Eichhoff and Hopkins, the presence of a frontal tuft is a female character, while in the species of Leconte's group B, with confusedly-punctured and pubescent elytra, Hopkins has shown for *P. minutissimus* (Zimm.) (Canad. Ent. xxvi. p. 277) that the frontal tuft is a male character. It is hard to suppose that opposite sexual characters coexist in the same genus.

It is probable that the species here collected under the generic name will be separable into two or more genera, if and when their structural characters can be more exhaustively studied.

1.	Antennal club narrow, with straight or nearly straight sutures . . .	2.
	Antennal club broad-oval or suborbicular, with curved sutures . . .	15.
2.	Elytra punctured in rows	3.
	Elytra confusedly punctured	*pubipennis*, Lec.
3.	Elytral declivity impressed, at least on each side of the suture . . .	4.
	Declivity uniformly convex, the sutural margins at most feebly raised .	12.
4.	Elytra acuminate at apex	5.
	Elytra conjointly rounded at apex	9.
5.	Elytral declivity with a deep common sulcus, the margins of the suture less elevated than the lateral calli	*nigricans*, sp. n.
	Declivity with a shallow sulcus on each side of the suture, its margins on a level with the lateral calli	6.
6.	Second row of punctures on the elytra absolutely regular throughout .	*amœnus*, sp. n.
	Second row with at least two punctures displaced opposite punctures of the third interstice	7.
7.	All the inner rows of punctures on the elytra irregular, non-striate . .	*confusus*, sp. n.
	The first and third rows regular, feebly impressed	8.
8.	Form rather stout; prothorax ample, not depressed behind	*poricollis*, sp. n.
	Form rather slender; prothorax not ample, slightly depressed behind the discal elevation	*cacuminatus*, sp. n.
9.	Apical half of the prothorax confusedly granulate	10.
	Apical half of the prothorax with concentric lines of granules	11.
10.	Elytral interstices subconvex throughout	*guatemalensis*, sp. n.
	Elytral interstices quite flat before the middle	*diglyphus*, sp. n.

11.	Elytra with a deep apical sulcus, its fundus punctured, the lateral calli prominent	*obtusipennis*, sp. n.
	Elytra each with a shallow impunctate apical sulcus, the lateral calli not prominent	*timidus*, sp. n.
12.	Apex of elytra tuberculate	*guatemalensis*, sp. n.
	Apex of elytra not tuberculate	13.
13.	Elytral punctures moderately deep	*confinis*, sp. n.
	Elytral punctures extremely fine	14.
14.	Form elongate; elytra with fine, erect, pale hairs at apex	*cincinnatus*, sp. n.
	Form not elongate; elytra wholly glabrous	*obsoletus*, sp. n.
15.	Species minute, not exceeding 1·7 millim. in length	16.
	Species 2 millim. or upwards in length	17.
16.	Prothorax irregularly granulate in front, simply and finely punctured behind	*incompositus*, sp. n.
	Prothorax with concentric lines of asperities in front, subasperately punctured behind	*carinifrons*, sp. n.
17.	Elytra wholly glabrous	*politus*, sp. n.
	Elytra setose at apex	18.
18.	Base of prothorax strongly punctured	*deyrollei*, sp. n.
	Base of prothorax finely granulate	*incommodus*, sp. n.

1. **Pityophthorus nigricans,** sp. n.

Subelongatus, nitidus, niger, antennis et pedibus fuscis, breviter pilosus; prothorace antice constricto, dorso utrinque post medium impresso, mediocriter punctato; elytris ad apicem acuminatis, striato-punctatis, declivitate obliqua, utrinque præter suturam sulcata, et in callum externum prominulum lateraliter elevata. Long. 2·5 millim.

Mas. Fronte glabra, elytrorum sulco profundiore, callis fortius elevatis.

Fem. Fronte pallide villosa.

Rather elongate, shining black, antennæ and legs fuscous. Front (♂) subconvex, punctured, shortly carinate over the mouth, its margin alone pilose; front (♀) clothed with erect, curled, pale yellowish hairs; antennal club broad, its sutures slightly curved, fringed with pale hairs. Prothorax about as broad as long, widest near the base, constricted towards the broadly rounded apex, the sides gently rounded behind, the hind angles obtuse, the base slightly curved; surface depressed on each side behind the transverse median elevation, scarcely pubescent, anteriorly with irregular transverse lines of asperities, the basal half with moderately strong and close punctuation, absent over the median line and a lateral patch. Scutellum rounded-triangular. Elytra three-fourths longer than the prothorax, with subrectangular shoulders, the sides nearly parallel to the hinder third, thence gradually rounded, the apical margins oblique, acuminate; surface with regular scarcely impressed rows of moderate punctures, the sutural row substriate, interstices nearly flat, alternately wider and narrower, with occasional single punctures similar to those of the striæ; declivity pilose with scattered fine hairs, with a deep, impunctate, median sulcus, stronger in the male, the sutural margins scarcely raised, much lower than the lateral calli, which are more elevated, subangulate, and crested with fine tubercles in the male. Underside pitchy-black, pubescent; pygidium evident from below.

Hab. GUATEMALA, Quiché Mts. (*Champion*).

Three examples. This insect is allied to the species described by Eichhoff as *P. nitidulus* (Mann.); it is, however, entirely black, with the elytra less finely punctured in regular rows, the interstices smoother, the declivity more obliquely sulcate, its

pubescence finer, scantier, and shorter. Whether an example of *P. nitidulus* before me so named by Eichhoff himself is actually Mannerheim's species or not, I have no means of deciding.

2. **Pityophthorus amœnus,** sp. n.

Subcylindricus, sat nitidus, badius; subtus cum antennis pedibusque testaceus; prothorace latitudine sublongiore, antice subconstricto, dorso anterius granulis in lineas concentricas ordinatis aspero, posterius fortiter sparsim punctato, linea media nitida lævi; elytris posterius setosis, acuminatis, ad amussim striato-punctatis, interstitiis lævibus, declivitate utrinque præter suturam impressa, lævi, margine utroque suturali et callo laterali elevatis, subtiliter tuberculatis.

Long. 2·2 millim.

Nearly cylindrical, bright brown, the apex of the prothorax a little darker, the underside, antennæ, and legs testaceous. Front (♀ ?) covered with short, downy, erect hairs; eyes emarginate. Prothorax a little longer than broad, widest before the base, slightly constricted in front, the sides behind gently, the apex broadly rounded, the hind angles obtuse; disc with a slight median elevation, in front with irregular concentric rows of granules, behind subdepressed, somewhat dull, rather strongly and sparingly punctured, the median line and two lateral spots impunctate, shining. Scutellum small, obtuse triangular. Elytra narrower at the base than the prothorax at its widest and two-thirds longer, the shoulders slightly obtuse but not rounded, the sides subparallel, obliquely rounded at the acuminate apex; surface with quite regular rows of strong punctures, the sutural row distinctly, the others weakly impressed, interstices nearly flat, shining, impunctate; declivity with a moderately deep, wide, shining, impunctate impression along each side of the suture, the margins of the latter and the lateral calli elevated, finely tuberculate, the ridge and outer face of the calli pilose with rather long hairs.

Hab. GUATEMALA, Dueñas (*Champion*).

One specimen; distinguished from the N.-American *P. pullus* (Zimm.) (=*cribripennis*, Eichh.) by the very regular rows of punctures on the elytra and the shining smooth interstices. In other respects it somewhat resembles that species.

3. **Pityophthorus confusus,** sp. n.

Subelongatus, cylindricus, sat nitidus, fusco-ferrugineus, pube brevi tenui vestitus; prothorace fere semielliptico, apice medio obtusius rotundato, dorso post medium fortiter punctato, linea media lævi; elytris ad apicem acuminatis, lineato-punctatis, lineis internis irregulariter compositis; declivitate præter suturam utrinque impressa, impunctata, lateribus elevatis vix callosis.

Long. 2·2–2·8 millim.

Subelongate, cylindrical, moderately shining, ferruginous, prothorax a little infuscate apically; pubescence fine, very short, and confined to the extremities of the body. Prothorax longer than broad, widest at base, the sides very slightly rounded behind, gradually more strongly towards the apex, which is somewhat obtuse in the middle, hind angles rounded, base truncate; surface with a slight median elevation, irregularly asperate in front, strongly but not closely punctured behind, except over the median line, with an interstitial punctuation of minute points. Scutellum rounded, punctured. Elytra as wide as the prothorax and one-half longer, the shoulders rectangular, the sides parallel, the apex acuminate, slightly produced at the sutural angles, with rows of strong punctures, the second and third irregular, the sutural row not impressed, interstices flat, with a few punctures scarcely distinguishable from those of the striæ, closer posteriorly; apex strongly but obliquely declivous, with an impunctate impression on each side of the suture, the margins of which are elevated, but not conspicuously tuberculate. Underside scarcely pubescent, the fifth ventral segment deeply incised at apex.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Three examples. The two smaller have the front fringed with long, forwardly-directed, incurved, fulvous hairs, and the elytra more deeply impressed at the apex, so that the lateral callose elevations are more distinct; they are probably females. The head is hidden in the larger specimen, but appears to be without the frontal hairs. In this species, as in *P. poricollis* and *P. cacuminatus*, certain of the elytral rows of punctures, notably the second, have three or four punctures displaced inwards, each opposite a puncture of the interstice on the outer side, so that the row appears to have its arrangement broken at intervals by the substitution of a pair of punctures for a single one. This is not found in *P. amœnus*.

4. **Pityophthorus poricollis,** sp. n.

Oblongus, nitidus, subglaber, castaneus; prothorace amplo, latitudine longiore, anterius subconstricto, dorso haud gibboso, postice conferte fortiter punctato; elytris haud elongatis, ad suturæ apicem subproductis, sat fortiter punctatis, interstitiis rarius punctatis, declivitate utrinque sulcata.

Long. 1·7 millim.

Oblong, not elongate, shining and subglabrous, castaneous, the antennæ and legs testaceous. Prothorax longer than broad, ample, slightly constricted in front, the apex rather obtusely rounded, the sides dilated behind the middle, the hind angles rectangular; surface ferruginous, with no median elevation or posterior depression, its apical half lighter, granulate, the granules forming concentric lines anteriorly and confused behind, its basal half closely and strongly punctured, with a shining non-elevated median line, the interspaces with a groundwork of minute punctures. Scutellum rounded-triangular. Elytra narrower than the prothorax and barely one-half longer, sides nearly straight, subampliated at the hinder third, then incurved, the apex acuminate and slightly produced at the sutural angles when seen from behind; surface with rows of strong close punctures, the sutural row impressed, interstices narrow, not quite flat, with a few punctures as deep as those of the rows; apex strongly declivous, with a sulcus punctured in rows on each side of the suture, margins of the latter little elevated, finely tuberculate, the lateral calli rather strongly raised, tuberculate, sparsely setose.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

The head is too far concealed in the single specimen to allow of its structure being made out, but it is destitute of any frontal villosity.

5. **Pityophthorus cacuminatus,** sp. n.

Subelongatus, subnitidus, piceus aut piceo-ferrugineus, parce brevissime pilosus; prothorace latitudine longiore, ante medium angustato, nec constricto, dorso postice sat fortiter punctato, linea media elevata lævi; elytris ad apicem acuminatis, lineato-punctatis, declivitate obliqua, convexa, pube tenui vestita, utrinque præter suturam subsulcata.

Long. 1·8 millim.

Subelongate, moderately shining, pitchy or pitchy-red, with very short pubescence; the antennæ and legs testaceous-yellow. Head (? ♀) with a frontal impression margined with incurved pale yellow hairs. Prothorax longer than broad, nearly parallel-sided behind, narrowed anteriorly, the apex somewhat obtusely rounded, the hind angles rectangular; surface with a median transverse elevation, asperate in front, the asperities tending to form concentric lines, closely and strongly punctate behind, the median line subelevated, shining, narrow, widened at the base. Scutellum rounded. Elytra as wide at the base as the prothorax and three-fourths longer, the sides straight, parallel or very slightly divergent to the hinder fourth, then inflexed obliquely to the subproduced sutural angles; surface moderately strongly

punctured in rather regular rows, the sutural row and sometimes the others appearing just impressed in certain lights, interstices narrow, not quite flat, the second and third with two or three punctures, the remainder impunctate except on the declivity; the latter confusedly punctured, very shortly pubescent, with a narrow sulcus on each side of the suture, its fundus rather dull, margins of the suture elevated, but not evidently tuberculate, the sides not callose.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Three examples, without sexual difference, probably females. The species resembles *P. confusus*, but is less than half the size, and is distinguished by the much closer punctures and elevated median line of the prothorax, and the more regular rows of punctures on the elytra, which nevertheless show the displacement spoken of under that species.

6. **Pityophthorus guatemalensis,** sp. n.

Oblongus, cylindricus, piceus, prothoracis apice et elytris, limbo laterali excepto, dilutioribus, antennis pedibusque testaceo-ferrugineis, nonnunquam totus ferrugineus vel testaceus, prothorace medio subinfuscato, parce pilosus; prothorace fere semi-elliptico, anterius vix constricto, dorso postice mediocriter punctato, linea media lævi; elytris subparallelis, apice rotundatis, striato-punctatis, stria suturali impressa, interstitiis subconvexis, declivitate utrinque impressa, longius setosa.

Mas. Fronte subglabra, declivitate profundius impressa, margine suturali et callo laterali elevatis, fortius tuberculatis.

Fem. Fronte villosa, declivitate parum impressa, marginibus vix elevatis obsolete tuberculatis.

Long., ♂ 2·2–3 millim., ♀ 2–2·6 millim.

Oblong, cylindric, rather shining, piceous, with the apex of the prothorax (indistinctly) and the elytra ferruginous brown, the latter with a dark marginal band; often ferruginous or testaceous, with the head and a median shade on the prothorax infuscate; antennæ and legs in mature examples yellowish-ferruginous. Front (♂) subconvex, closely and rugosely punctured, with a short carina over the mouth, which is fringed on each side with numerous yellowish hairs; front (♀) clothed with decumbent yellowish hairs around a smooth elevation; eyes emarginate. Prothorax longer than broad, subelliptically rounded from behind the middle to the apex, sometimes subconstricted in front, hind angles subrectangular; disc with traces of a median elevation, shortly pubescent, in front granulate, not in concentric lines, behind moderately punctured, the punctures sparser and weaker towards the base and impunctate median line. Scutellum rather large, rounded, punctured. Elytra scarcely so wide as the prothorax and one-half longer, subparallel-sided, the apex rather obtuse; with substriate rows of strong punctures, the sutural row impressed, the interstices slightly convex, finely wrinkled and impunctate; apex strongly declivous, sulcate on each side of the suture; sulcus (♂) broad and deeper, its sutural margins and lateral calli moderately elevated, the former each with three, the latter each with four setiferous tubercles; sulcus (♀) narrower, less impressed, the setiferous tubercles weaker. Underside in mature specimens piceous. Pygidium distinctly visible.

Hab. GUATEMALA, Guatemala city, Zapote, Calderas, Capetillo, Quiché Mts. (*Champion*).

The specimens taken, twenty in number, differ much in size, one male (3 millim. in length) from Zapote being much larger than the rest. This peculiarity is found in other species of the genus, e. g. *P. lichtensteini* (Ratz.). The prothorax in some examples is distinctly constricted in front; the variation in colour depends probably on differences in the degree of maturity.

7. **Pityophthorus diglyphus,** sp. n.

Subelongatus, subnitidus, parce breviter pilosus, piceus, ore, disco prothoracis medio et elytris rufescentibus; prothorace haud longiore quam latiore, antice constricto, dorso medio tuberculo transverso elevato, posterius præter lineam mediam lævem sat conferte, lateribus obsolete punctato; elytris apice conjunctim rotundatis, lineato-punctatis, interstitiis alternis sparsim punctatis, declivitate præter suturam anguste sulcata.

Long. 2·1–2·6 millim.

Rather elongate, moderately shining, with very scanty pubescence. Head (? ♂) piceous-black, front rather flat, closely punctured, with moderately dense and short pubescence, carinate over the mouth, which is rufescent and fringed with longer yellowish hairs; front (? ♀) not carinate or impressed, with close fine punctuation, absent over the middle, with dense, short, erect pubescence and a marginal fringe of long slightly curled hairs; antennæ fusco-testaceous or inclined to piceous. Prothorax not longer than broad, strongly constricted apically, widest about the base, the sides slightly rounded behind, sinuate in front, the apex more rounded; disc shortly pubescent, deep piceous, the apex and a median transverse elevated tubercle rufescent, anterior half with scattered asperities not reaching the apical margin, posterior half depressed on each side behind the tubercle, moderately closely punctate, with a median smooth line, the punctures weak towards the side margins. Scutellum rather large, rounded. Elytra little narrower at base than the prothorax, twice as long, parallel-sided, or subampliated about the middle, rounded, incurved behind, the hind margins strongly rounded but scarcely acuminate; surface glabrous, with rows of rather strong punctures, the first impressed throughout, the remainder towards the apex only, the 2nd and succeeding alternate rows rather irregular, interstices nearly flat, the 2nd and succeeding alternate interstices with occasional punctures as deep as those of the principal rows; declivity convex, with a narrow sulcus on each side of the suture, formed by the widening of the sutural stria, its fundus shallow, impunctate, the margins little elevated, with minute setiferous tubercles. Underside fusco-piceous, the abdomen lighter; legs fuscous or piceous.

Hab. GUATEMALA, Quiché Mts., Balheu in Vera Paz (*Champion*).

Four specimens, all probably taken under the bark of pines. The single example from the Quiché Mountains is larger than any from Balheu; the apical sulci of its elytra are wider and flatter, their margins are somewhat less elevated, and the setæ, though fine, are longer and more evident.

8. **Pityophthorus obtusipennis,** sp. n.

Subcylindricus, haud elongatus, nitidus, ferrugineus; prothorace latitudine vix longiore, dorso anterius lineis tuberculorum concentricis aspero; elytris irregulariter striato-punctatis, præter suturam rugulosis, interstitiis apicem versus lineato-punctatis, declivitate bisulcata, sutura vix elevata, ambitu singulo in callum prominulum crebre subtiliter tuberculatum elevato, margine apicali transverso.

Long. 2·1 millim.

Cylindrical, shining, ferruginous, with rather long, thin, fulvous pubescence. Front (in both examples) convex, not carinate, with rather strong close punctuation, pubescence thin, erect, mouth fringed; eyes emarginate; antennæ testaceous. Prothorax scarcely longer than broad, widest about the middle, constricted in front, the sides behind slightly, the apex broadly rounded and crenulate, hind angles obtuse, the basal margin curved; surface subimpressed on each side behind a slight median transverse elevation, the apical half asperate in well-marked concentric lines, the anterior pair rather remote from each other, the basal half somewhat finely punctate, the median line smooth, non-elevated. Scutellum rather small, triangular. Elytra as wide at the base as the prothorax and one-half longer, the shoulders subrectangular, the sides subparallel and scarcely converging behind, the apical margin transverse when seen from above; surface with strong punctures in scarcely impressed rows, rather irregular near the suture, interstices shining, rugulose internally, with remote and scarcely weaker piliferous punctures on the apical part of the alternate interstices; apex strongly declivous, sulcate on each side of the suture, the sulcus with

indistinct rows of punctures, the sutural margins scarcely raised and feebly tuberculate, the sulci limited externally by a strongly elevated callus, its ridge crenate with small tubercles, pilose and nearly vertically declivous behind. Underside and legs testaceous.

Hab. GUATEMALA, Balheu in Vera Paz (*Champion*).

In colour and sculpture similar to *P. pullus* (Zimm.) (= *cribripennis*, Eichh.), but with the elytra relatively much shorter, more deeply sulcate at the apex, with stronger lateral elevations, and the hind margin transverse and not produced at the suture. The two examples taken show no sexual differences.

9. **Pityophthorus timidus,** sp. n.

Oblongus, subnitidus, fuscus; prothorace antice concentrice asperato, postice fortiter punctato; elytris postice rotundatim angustatis, apice obtuse rotundatis, lineato-punctatis, linea suturali impressa, declivitate seriato-setosa, utrinque subsulcata, sutura et callis lateralibus minute tuberculatis.

Long. 1·4 millim.

Oblong, moderately shining, fuscous. Forehead convex, dull, closely and strongly punctured towards the mouth, smooth above, with very short scanty pubescence and thin oral fringe. Prothorax longer than broad, widest before base, semielliptic and scarcely constricted in front, hind angles obtuse, the base acutely margined; surface with a slight antemedian transverse elevation, subglabrous, in front with four concentric rows of asperities, behind strongly punctured with a subelevated impunctate median line. Scutellum small, rounded. Elytra as wide as the prothorax and three-fourths longer, subparallel-sided to the hinder third, thence gradually narrowed, the apical margin uniformly rounded; moderately strongly punctured in regular rows, the sutural row impressed, interstices narrow, flat, impunctate, posteriorly with rather long, pale, uniseriate setæ; declivity obliquely convex, with a narrow juxta-sutural impression on each side, the feebly raised sutural margins and lateral callosities with a few minute tubercles. Underside fusco-testaceous, the abdomen darker, legs testaceous; pygidium just visible from below.

Hab. MEXICO, Cordova (*Sallé*).

But one example of this little species, one of the smallest of the genus, has reached us. Though it presents no very prominent characters, the insect cannot well be referred to any of the *Pityophthori* described by Eichhoff. Judging from the description, it comes nearest to *P. concentralis*, Eichh., from Cuba and Florida, but it differs in that the first row of punctures on the elytra is alone striate, and the apical impressions are neither wide nor deep. Unfortunately no authentic specimen of *P. concentralis* has been accessible.

10. **Pityophthorus confinis,** sp. n.

Elongatus, sat nitidus, breviter pubescens, piceus, prothoracis apice et elytris rufescentibus, vel badius, prothoracis disco infuscato; prothorace subelliptico subæqualiter convexo, antice confuse granulato, postice conferte punctato; elytris parallelis, apice rotundatis, lineato-punctatis, interstitiis lævibus, declivitate convexa, obsolete punctata, sutura subelevata.

Long. 1·8–2·1 millim.

Elongate, cylindrical, piceous-black, with the apex of the prothorax and the elytra reddish, or testaceous-brown, with the head and disc of the prothorax more or less infuscate. Front thinly pubescent, either subconvex and shortly carinate over the mouth or flattened with the carina absent. Prothorax longer than broad, slightly or not at all constricted in front, the sides and apex rounded in an incomplete ellipse, hind angles obtuse; surface almost uniformly convex, with no median elevation, in front irregularly asperate with

close rather fine granules, behind moderately shining, closely and rather strongly impunctate, the non-elevated median line and a spot on either side impunctate. Scutellum obtuse-triangular. Elytra scarcely so wide as the prothorax and a little more than one-half longer, parallel-sided, not narrowed behind and conjointly rounded at apex; regularly lineate-punctate, the sutural row impressed, the interstices flat, shining, and with fine seriate hairs towards the apex; declivity convex, obsoletely punctate, with a hardly perceptible flattening and no sulcus on each side, the sutural margins subelevated. Underside lighter or darker fuscous, subglabrous. Antennæ and legs yellowish.

Hab. MEXICO, Jalapa (*Höge*); GUATEMALA, Capetillo (*Champion*).

Three specimens from each locality. The examples from Jalapa are darker, with a more evident prothoracic constriction, and the rows of punctures on the elytra slightly stronger. The differences are probably not specific, but due to maturity. This species is superficially like *Dryocœtes macilentus*, from which it is easily separated by the tibial structure. The lighter specimens somewhat resemble small examples of *P. guatemalensis*, a species also occurring at Capetillo, from which they may be distinguished by the absence of tubercles on the apex of the elytra.

11. **Pityophthorus cincinnatus,** sp. n.

Elongatus, subnitidus, pallide pilosus, niger, antennis pedibusque piceis; prothorace longiore quam latiore, anterius confuse granulato, posterius tenuiter punctato; elytris ad apicem rotundatis, persubtiliter lineato-punctatis, interstitiis alutaceis, declivitate convexa, integra, impunctata, longius seriato-pilosa.
Long. 2·2 millim.

Elongate, not very shining, black, the antennæ and legs piceous. Head (? ♀) with an oblong shining space over the mouth, closely surrounded with a dense mass of curled yellow hairs, vertex granulate, mouth densely fringed; antennal club large, oval. Prothorax longer than broad, widest at base, the sides very slightly curved and converging towards the apex, the latter rather obtuse in the middle; surface with a median, transverse, slight elevation, shortly pubescent, its anterior half granulate, its posterior half moderately closely and weakly punctured, except over the median line and two lateral spots. Scutellum rounded, shining. Elytra as wide as the prothorax and two-thirds longer, parallel-sided, strongly rounded and not subacuminate at apex, with rows of very fine punctures, the sutural row scarcely impressed, interstices flat, finely alutaceous, set behind the middle with slender, pale, erect hairs in single rows; declivity convex, not impressed nor punctate, with the suture just visibly elevated. Underside black. Legs piceous.

Hab. GUATEMALA, Quiché Mts. (*Champion*).

The solitary example received cannot be readily mistaken for any other Central-American species, save *P. confinis*, which it somewhat resembles.

It is distinguished by the extremely fine punctuation and alutaceous insterstices of the elytra, and the pale erect pubescence of the declivity. The structure of the forehead is characteristic, at least for the sex to which the specimen described belongs.

12. **Pityophthorus obsoletus,** sp. n.

Oblongus, subnitidus, glaber, piceo-fuscus, subtus piceus, antennis, coxis pedibusque testaceis; clava antennarum angusta; prothorace semielliptico, antice confuse granulato, postice sat subtiliter punctato, linea media lævi; elytris quam subtilissime lineato-punctatis, interstitiis coriaceo-rugulosis, declivitate convexa, integra.
Long. 1·5 millim.

Oblong, not elongate, slightly shining, glabrous above, piceous-brown, the antennæ, coxæ, and legs pale testaceous. Front with an impression margined by a forwardly directed fringe of pale hairs. Antennal

club narrow, subacuminate, the basal joint short, separated by a well-marked subtransverse suture from the succeeding joints, the other sutures indistinct, rounded. Prothorax not longer than broad, widest at the base, the sides behind nearly straight, gradually rounded forwards in an elliptic curve, the anterior margin granulate, hind angles rectangular; surface moderately curved, gradually declivous in front, with no discal elevation, its anterior half with fine, close, confused granulation, its posterior half with rather fine punctuation, the median line impunctate but not elevated, the interspaces with a close fine shagreening. Scutellum moderately large, obtuse-triangular, dull. Elytra as wide as the prothorax and three-fourths longer, parallel-sided to the hinder third, thence incurved, apex strongly rounded but not subacuminate; surface with rows of extremely fine punctures without striate impression, interstices narrow, with very fine close rugæ, and interspersed with minute punctures; declivity beginning at the hinder third, uniformly and strongly convex. Underside piceous; pygidium visible from beneath. Tarsi short and moderately slender.

Hab. GUATEMALA, Las Mercedes (*Champion*).

One example. This insect is separated from the species of the group represented by *P. pubipennis* by the distinct punctuation of the base of the thorax and the lineato-punctate elytra. The form of the antennal club recalls that of *Styphlosoma granulatum*, from which *P. obsoletus* is distinguishable by the smooth surface and declivous pygidium.

13. **Pityophthorus pubipennis.**

Tomicus pubipennis, Lec. Pac. Railr. Expl. & Surv. xi., Ins. p. 59[1].
Cryphalus pubipennis, Lec. Trans. Am. Ent. Soc. 1868, p. 156[2].
Pityophthorus pubipennis, Lec. Rhynch. N. Am. p. 351[3]; Eichh. Rat. Tom. p. 197[4].

Hab. NORTH AMERICA, Sonoma (*Ricksecker*) and San José[1] in California.—GUATEMALA, San Gerónimo (*Champion*).

The single specimen taken by Mr. Champion agrees in all respects with Leconte's description and with named examples from California taken by Mr. Ricksecker and Mr. Wickham. Those before me vary from 1·7 to 2·3 mm. in length, the Guatemalan example being the smallest.

The succeeding species differ considerably from normal *Pityophthori* in the shape of the antennal club; but they are here included in the genus on account of the difficulty of ascertaining from such limited material sound characters on which to treat them independently.

14. **Pityophthorus incompositus,** sp. n.

Oblongus, sat nitidus, badius; antennarum clava ovali, suturis valde curvatis; prothorace anterius parum constricto, disco posterius præter lineam mediam lævem sat distincte, lateraliter obsoletius punctato; elytris tenuissime lineato-punctatis, apicem versus sparsim erecte setosis, declivitate utrinque prope suturam impressa, lævi, marginibus subtuberculatis.

Long. 1·6 millim.

Oblong, rather shining, bright testaceous-brown. Front rather flat, strongly punctured, the mouth fringed with yellow pubescence; funiculus short, the club oval, with strongly curved fringed sutures (almost as in *Xylocleptes*), the basal joint shining. Prothorax longer than broad, widest at base, slightly constricted in front, the apex broadly rounded, the hind angles obtuse; disc subgibbous before the middle, behind obscurely impressed on each side, irregularly tuberculate and very shortly pubescent in front, its basal

half distinctly but finely punctured on each side of the smooth median line, the punctures becoming weak toward the sides. Scutellum small, rounded. Elytra nearly one-half longer than the prothorax and narrower at base, their sides slightly curved throughout and converging behind, broadly rounded at apex; with rows of extremely fine punctures, the interstices flat, with irregular microscopic punctures, the hinder third bearing short uniseriate bristles; the subsutural stria impressed from behind the middle, widened on the declivity, its fundus smooth and impunctate, the sutural and outer margins subtuberculate.

Hab. GUATEMALA, Coatepeque (*Champion*).

This little species, represented by a single example, is easily distinguished by the almost microscopically fine elytral punctuation and the aberrant antennal club. That the latter structure should exist in an insect which is in other respects a perfectly normal *Pityophthorus* goes to prove, if proof were wanting, that the shape of the joints and consequently of the sutures in that organ is far from affording an infallible guide to the generic division of the Scolytidæ.

15. **Pityophthorus carinifrons,** sp. n.

Oblongus, subnitidus, subglaber, piceus, capite nigricante, antennis pedibusque ferrugineis; earum clava magna, suborbiculari, indistincte articulata; fronte media carinata; prothorace antice subconstricto, dorso posterius asperate punctato, linea media lævi elevata; elytris alutaceis, subtilissime punctatis, postice brevissime sparsim setosis, declivitate convexa, sutura subelevata.

Long. 1·7 millim.

Oblong, not elongate, subnitid and nearly glabrous, piceous-brown. Head pitchy-black, rufescent towards the mouth, convex in front, rugose and sparingly pubescent, with a narrow, acute, median carina extending from mouth to vertex; eyes emarginate; antennæ testaceous-yellow, the club very large, orbicular, uniformly covered with short hairs, with two indistinct strongly curved sutures towards the base. Prothorax ample, as long as broad, scarcely constricted towards the strongly rounded apex, the sides gently rounded behind, the hind angles subrectangular, the base sub-bisinuate; disc without evident median elevation, with very short scanty pubescence, in front obliquely declivous, with concentric rows of asperities which become weaker behind, to be replaced over the basal portion by subasperate punctures, the median line shining and subelevated. Scutellum small, triangular, punctured. Elytra rather narrower than the prothorax and one half longer, widest at base, the sides converging from the middle and gradually rounded to the apex; surface finely punctured in indistinct irregular rows, with an impressed stria along each side of the suture from the middle to the apex, interstices alutaceous; declivity convex, with a few short scattered setæ and a row on each sutural margin. Underside piceous; pygidium visible from beneath. Legs testaceous.

Hab. MEXICO, Motzorongo in Vera Cruz (*Flohr*).

One example. The elytra, like the prothorax, show, in addition to the apical setæ, a few minute hairs, visible only under the microscope. This species bears a strong general resemblance to the group of which *P. pubipennis*, Lec., is representative, agreeing with them in the extremely fine punctuation of the elytra. It is, however, peculiar in the structure of the antennal club.

16. **Pityophthorus politus,** sp. n.

Oblongus, subovalis, glaber, ferrugineus; prothorace semielliptico, dorso subæqualiter convexo, post medium subopaco, sat dense subtiliter punctato, linea media lævi; elytris nitidis, tenuiter lineato-punctatis, stria suturali vix impressa, interstitiis planis, lævibus, apice fortiter convexe declivi, sutura subelevata, margine postico obtuse rotundato.

Long. 2·4 millim.

Oblong, suboval, glabrous, bright ferruginous. Front convex, punctured; antennal funiculus short, the club not large, ovoid, with curved sutures. Prothorax as long as broad, semielliptic, widest at the transverse and feebly margined base, the sides almost regularly curved save for a slight constriction towards the sharply rounded apex, separated from the flanks by a fine ridge; surface uniformly convex, declivous and finely asperate in front, the asperities weaker behind and replaced towards base by rather fine close punctures, absent over the middle line, interspaces closely reticulate and dull. Scutellum obtuse-triangular, shining. Elytra as wide as or a little wider than the prothorax and one-third longer, their sides subparallel to the hinder third, thence gradually incurved, the apical margin obtusely rounded; surface shining, with regular rows of fine punctures, the sutural row weakly and rather broadly impressed, interstices flat, reticulate, subimpunctate; apical third strongly declivous and convex, slightly flattened from side to side, with the margins of the suture raised. Tibiæ narrow, spinose above, and truncate at apex. Pygidium visible from beneath.

Hab. Mexico (*A. Deyrolle*).

Two examples in my own collection. This species is somewhat removed in appearance from most of the genus, and to a certain extent suggests a Hexacolid. It does not, however, belong to that group.

17. **Pityophthorus deyrollei,** sp. n.

Oblongus, subopacus, breviter subæqualiter pilosus, piceus, antennis et pedibus fusco-flavis; prothorace semielliptico, anterius haud constricto, dorso post medium dense profunde punctato, linea media lævi; elytris irregulariter punctato-striatis, stria suturali impressa, in declivitate cum secunda ad sulcum subsuturalem faciendum conjuncta, interstitiis punctis setiferis raris ornatis, apice obtuso.

Long. 2·5 millim.

Oblong, rather dull, pitchy, with short rather fine pubescence. Head strongly punctured and fringed over mouth; eyes oval, emarginate; antennæ fuscous-yellow, the funiculus very short, the club rather large, suborbicular, with strongly curved sutures, the inner half of the basal suture strongly chitinized and darker. Prothorax semielliptic, as long as broad, finely margined and bisinuate at base, the sides incurved from the basal third, and more strongly rounded but not constricted towards the apex; disc without median elevation, uniformly pubescent, its anterior half asperate, the posterior half strongly and closely punctured, with a smooth median line. Scutellum triangular, rugosely punctured, and impressed. Elytra one-third longer than the prothorax and as wide at base, subparallel to behind middle, then incurved, rather obtusely rounded at apex; surface subcylindrical to the hinder third, then strongly declivous and convex, with weakly impressed irregular striæ of rather small punctures, the sutural stria impressed almost from base, becoming confluent with the second on the declivity to form a sulcus on each side of the suture; interstices with irregular single rows of equally strong but sparser piliferous punctures, becoming confused externally with those of the striæ; declivity punctate-striate, with a callous ridge external to the sulcus, and with the sutural margins somewhat raised. Legs fuscous-yellow, the tibiæ narrow, spined externally and truncate at apex.

Hab. Mexico (*A. Deyrolle*).

Two examples in my own collection.

18. **Pityophthorus incommodus,** sp. n.

Oblongus, opacus, pube brevissima vestitus, fusco-ferrugineus, capite fusco-nigro; prothorace latitudine longiore fere semielliptico, dorso confuse granulato, granulis posterius subtilioribus; elytris confuse leviter punctulatis, in dimidia parte apicali juxta suturam stria singula notatis, marginibus suturæ inde subelevatis, declivitate convexa breviter seriato-setosa.

Long. 2·2 millim.

Oblong, dull, fusco-ferruginous, covered with very short, uniformly scattered decumbent hairs. Head large,

blackish, subconvex in front, finely and rugosely punctured, with a fine median carina reaching the vertex, pubescence short; eyes coarsely granulate, scarcely emarginate; antennæ ferruginous, large, broad-oval, with strongly curved sutures, very indistinct on the outer face, which is entirely covered with short hairs, more distinct within, with the margins fringed with very short hairs. Prothorax longer than broad, nearly semielliptic, the sides nearly straight behind, very slightly constricted in front, the apex rounded, hind angles rectangular, margined, the margins extending forwards along the sides, base subtransverse, distinctly margined; disc gradually and convexly declivous in front, without median elevation, with close and rather fine granulation, sparser and weak over the basal half, median line narrow, abbreviated, and scarcely raised. Scutellum small, rounded-quadrate, punctured. Elytra about as wide as the prothorax and one-half longer, with rounded shoulders, the sides subparallel to the middle, thence gently incurved to the rounded apex; surface alutaceous, with fine close punctuation in indistinct lines, sutural stria narrowly impressed from behind the middle; declivity convex, oblique, set with rows of short semierect hairs, the sutural margins slightly elevated. Underside fusco-ferruginous, pubescent; anterior coxæ closely approximate; abdominal segments 1 and 2 scarcely longer than 3 and 4; pygidium just visible from below. Legs ferruginous, the tibiæ rather slender and moderately spinose; the three basal tarsal joints short, equal, and rather stout.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

One example. Only two antennal sutures are visible, which are very strongly curved, but not concentric as in *Xylocleptes*.

GNATHOTRICHUS.

Gnathotrichus, Eichhoff, Berl. ent. Zeitschr. 1868, p. 275; Rat. Tom. p. 405.
Pityophthorus, Leconte, Rhynch. N. Am. p. 349 (pars).
Crypturgus, Zimmermann, Trans. Am. Ent. Soc. 1868, p. 142 (pars).
Cryphalus, Leconte, Trans. Am. Ent. Soc. 1868, p. 153 (pars).

This genus contains a few described species only, of which three are North American and three are natives of Chili. I add two others from Central America. All are much alike, and easily distinguishable by their general appearance. They are elongate and cylindrical, and remarkable for the smoothness of the hinder half of the prothorax and elytra, which exhibit only the very finest punctuation and are delicately reticulate. The maxillæ are set with close and fine setæ. The antennal scape is rather long; the club is rounded-oval, flattened, with moderately curved but not concentric sutures, set with a fringe of thin setæ, which are longer than in *Pityophthorus*. The prothorax is somewhat flattened, but is not constricted in front and has no lateral impressions; the discal elevation forms a small, sharp, transverse ridge, quite characteristic in shape; the ventral opening is very oblique, and there is no basal border. The elytra are wholly without impressed striæ, even the sutural stria being absent. The pygidium is ventral. The legs are long and slender; the tibiæ are narrow, gradually widened towards the apex, and armed at the extremity of the upper margin with two teeth, and with traces of others towards the base; the tarsi are slender, and relatively longer than in *Pityophthorus*.

The species of *Gnathotrichus* are, so far as is known, pine-feeders, and bore into the wood, the larvæ, as with other wood-boring Scolytids, being nourished on "ambrosia."

The habits of the North-American *G. materiarius* (Fitch) have been described by Fitch [Fourth Report on the Noxious Insects of New York, pp. 40–42 (1858)] and Howard [U.S. Dept. of Agriculture, Division of Entomology, Bull. no. 7, new series, p. 30 (1897)].

1. **Gnathotrichus consentaneus,** sp. n. (Tab. VII. fig. 26.)

Elongatus, cylindricus, fusco-piceus, prothoracis apice et elytrorum basi dilutioribus, pedibus testaceis; prothorace ad apicem elliptice rotundato, disco posterius subtiliter reticulato et sparsim punctato; elytris tenuiter reticulatis, obsoletissime lineato-punctatis, ad apicem in latere utroque præter suturam in callum plus minusve tuberculatum elevatis.

Long. 3·3–4·3 millim.

Elongate, cylindric. Head black, the front flattened, closely strigose with radiating aciculate scratches and with a few scattered hairs; antennæ brown-testaceous, the club fuscous, obovate, with curved sutures, their margins set with short stiff bristles (♂), the joints of the funiculus and the two basal joints of the club bearing each a long curved cilium (♀). Prothorax longer than broad, widest at the basal fourth, obliquely narrowed towards the apex, and elliptically curved, hind angles obtuse, base truncate; disc piceous or fusco-piceous, with the apex more or less broadly luteo-testaceous, elevated before the middle into a small transverse shining ridge, its anterior half asperate and shortly pubescent, the posterior half delicately reticulate, with fine scattered punctures, absent over the middle line. Scutellum triangular, shining, black. Elytra as wide as the prothorax and a little more than one-half longer, truncate at base, shoulders rounded-rectangular, sides parallel to beyond the middle, slightly incurved posteriorly, apical margin and sutural angles rounded; surface cylindric, declivous and convex behind, fusco-piceous, lighter towards the base, glabrous except for a few scattered hairs at the apex, with rows of indistinct fine punctures, the basal half of the sutural row subimpressed, interstices flat, alutaceous; declivity elevated on each side into a short callus bearing two small acute tubercles, sometimes indistinct, the interspace shining and not impressed. Underside fuscous-black. Legs testaceous.

Hab. Mexico, Omilteme in Guerrero (*H. H. Smith*), Teapa in Tabasco (*Höge*); Guatemala, San Gerónimo, Cerro Zunil, Totonicapam, Quiché Mountains, Volcan de Agua (*Champion*).

The examples received suggest that more than one species may be here represented, but no separation appears to be feasible. The form described is that from Totonicapam, represented by six specimens. In the three largest the two small pointed tubercles on each callus of the elytral declivity are distinct and there are faint traces of further tubercles; in the three smallest these tubercles are scarcely to be traced and the calli are less marked. These differences are not sexual.

A specimen from Teapa has the posterior calli sharply elevated, but very indistinctly tuberculated.

Single specimens from the Quiché Mountains and the Volcan de Agua are more brightly coloured, with the basal half of the elytra ochreous. In the former the prothorax is ochreo-testaceous, with the sides and a median longitudinal streak fuscous. In both the rows of punctures on the elytra are more distinct than in the specimens from Totonicapam, and the apical calli carry a serration of four small pointed tubercles. (Length 3·9 millim.)

An example from Omilteme and two from Cerro Zunil are similar to the smaller

specimens from Totonicapam, except that the Cerro Zunil pair are still smaller (3 mm.), smoother, and with the elytral calli nearly obsolete. These form a connecting-link with two little specimens from San Gerónimo (2·8 mm.), which have the prothorax nearly unicolorous, the elytra more shining and more distinctly punctured, and the apical calli feeble and non-tuberculate.

2. **Gnathotrichus bituberculatus,** sp. n.

Elongatus, cylindricus, sat nitidus, sordide fusco-testaceus, prothoracis disco anterius et ventre plus minusve infuscatis; prothorace oblongo, parallelo, ante medium transverse elevato, postice subtiliter vage punctato; elytra lineato-punctatis, declivitate utrinque tuberculata.

Long. 2·7 millim.

Mas. Fronte subglabra; declivitate elytrorum oblique retusa, ambitu ad latera marginato, subtus emarginato et bisinuato.

Fem. Fronte villosa; declivitate convexa, marginibus suturæ et apicem anguste divaricatis.

Elongate, exactly cylindrical, moderately shining, sordid brown-testaceous. Head infuscate; front (♂) rather flat, subglabrous, dull, somewhat closely punctured, the epistoma elevated; front (♀) villose; antennæ testaceous, the club darker, without evident sexual differences. Prothorax oblong, parallel-sided, subcircularly rounded in front, the base sub-bisinuate, hind angles narrowly rounded; surface with an antemedian transverse elevation, asperate and very scantily pubescent in front, finely and remotely punctured behind. Scutellum fuscous, triangular. Elytra scarcely as wide as the prothorax, one-half longer, separately and slightly rounded at base, the humeral angles obliquely rounded, the sides parallel throughout; surface cylindrical, finely lineato-punctate, the interstices narrow, flat, impunctate; apex (♂) with a subconvex retuse area, margined laterally, with subimpressed rows of fine punctures and short seriate setæ, and with a simple tubercle on each side in the line of the third interstice, its inferior border rather widely excised, the emargination broader than deep, its edges sinuate to form a rounded tooth on each side; apex (♀) strongly but not abruptly declivous, infuscate, impunctate, with rows of short setæ, the tubercle on each side larger, longitudinal, notched, the sutural margins divaricate at apex, with rounded angles. Underside and legs sordid fusco-testaceous; tibiæ slender, not widened apically, weakly toothed.

Hab. GUATEMALA, Purula in Vera Paz (*Champion*).

A pair. The antennal sexual characters usually found in *Gnathotrichus* are absent; the sexes in this case have not been determined by dissection, but are conjectured in accordance with the rule as to elytral characters (*anteà*, p. 85). This insect is somewhat distinct from any other at present referred to the genus, and in the structure of its elytra markedly approaches several species of *Pterocyclon*, from which the 5-jointed funiculus separates it.

Subgroup VI. CORTHYLI.

Corthylidæ, Eichhoff, Rat. Tom. p. 421.
Amphicranidæ, Eichhoff, *loc. cit.* p. 460.

This subgroup is rich in species and constitutes the most natural assemblage to be found among the Tomicides, and the one most characteristic of the Scolytids of Tropical America, to which region it is confined, except for a few stragglers into the temperate parts of the American continents. Eichhoff, it is true, divided it into two "subfamilies," but such a division is shown by the study of a larger number of species than he examined to be quite artificial and untenable.

The diagnosis of the Corthyli is given on page 185 of this work; but the peculiarities of the tibial structure there mentioned are scarcely constant, as in some genera, especially *Corthylus*, there are the faintest indications only of any roughness on the outer face of the tibia. The head is devoid of rostrum and is sometimes entirely hidden by the prothorax; the forehead may exhibit important sexual characters; the eyes, often large, are deeply emarginate and rather coarsely granulate. The funiculus is very short, with from one to three joints, a feature distinguishing the Corthyli from other Tomicides, except a few genera such as *Crypturgus* and *Aphanarthrum*, which differ in other structural characters and in general appearance. The basal joint, alone present in *Corthylus*, is cupulate; its apex is closely applied to the base of the club, and the intervening suture may at times appear evanescent or wholly obliterated. Examples are met with in which examination either fails positively to determine the number of joints or leads (as in two specimens of *Amphicranus* in our collection) to a result not in accordance with the normal character of the genus.

Such phenomena, observed in unique examples, are not necessarily constant in the species, and perhaps would be found not to exist if the antenna could in such cases be examined after mounting in balsam as a translucent object. They may have their origin in defects of observation alone. Their effect, however, is (as in *Hypothenemus*, *anteà*, p. 226) to diminish, though not wholly to destroy, the value to be placed on the number of joints as a trustworthy generic character.

It may be concluded, both for this and other subgroups, that a species (or individual) exhibiting a reduction in the number of funicular joints from that found in its nearest allies is not, in the absence of other appropriate differences of structure, generically distinct; whereas one that possesses a number in excess of its allies may be expected to manifest such other distinctions as will justify its generic separation.

The antennal club is moderate or large, sometimes very large, and flattened; ovate, acuminate, elongate or asymmetrical in shape, with two well-marked sutures and usually traces of a third, all more distinct on the outer than on the inner face. The latter, when the club is well-developed, is concave; and both faces are shortly pubescent and may be furnished (perhaps in the females alone) with fringes or fasciculi of long straight or curved hairs.

The mouth-parts are of the type associated with the wood-boring and ambrosia-feeding habit, having the maxilla fringed with fine setæ and the apical joint of the labial palpus longitudinally striate; those of the principal genera have been fully described by Eichhoff.

The prothorax has the flanks more or less impressed, and frequently an elevated margin along the sides and hind angles. Its anterior half is roughened by asperities, usually of the form which would be produced by making very oblique incisions into a ball of soft wood, so as to raise small cusps over the surface. The posterior half

of the prothorax and the cylindrical part of the elytra are either shining, or subopaque and alutaceous, owing to the presence of microscopic reticulation, and are usually feebly punctured with minute points, sometimes scarcely discernible with a low-power magnifier, without trace of impressed striæ. Pubescence and hairs are absent, except at the extremities of the body.

These features of surface-structure, which give the insects a peculiar smooth look, are common among, and almost confined to, the ambrosia-feeding Scolytidæ, but are most marked in this subgroup.

The declivity and extremities of the elytra show great variety in form and armature, and are singularly developed in *Amphicranus*.

The prosternum is variable in length, depending on the greater or less elongation of the species; the intercoxal process is indistinct or wholly absent.

Although many Corthyli are black or dull brown, there is among them a somewhat greater range of colour and marking than is usual in the Tomicides. Differences between the colours of the prothorax and elytra and a tendency towards decoration of a testaceous surface with patches or clouding of a darker shade are met with, and form a welcome relief from the dull uniformity prevalent in the bark-feeding Tomicides; and in two or three species of *Amphicranus*, elegance of form and effective, if simple, coloration are attained.

The division of the subgroup into genera, with their diagnosis, is not altogether an easy task. The variety of structure, particularly in the antennæ, is unusually great and a temptation to multiply genera undesirably. These most interesting insects have been little collected; their sexual differences are often considerable, and in few species are both sexes known. The genera tend to inosculate, and characters, usually trustworthy, are not always constant throughout the members of what must be regarded as a genus.

The classification of the Corthyli can only be put on a sound and permanent basis by the investigation of further material collected with special regard to the representation of both sexes.

Some fifty species, of which all but six are new, are here described or recorded from Central America, and of these thirty-four have reached us in single specimens. Such a collection gives little idea of the number of forms that must exist in the forests of the American tropics.

Our species are grouped into seven genera, of which three are new. Eichhoff recognized eight genera, but two of his, *Anchonocerus* and *Phthorius*, have not been found in our region, and two others, *Trypocranus* and *Steganocranus*, both imperfectly diagnosed, are also not found or are represented by forms here included in *Pterocyclon* and *Amphicranus* respectively.

In the year 1867, Ferrari, in his 'Die Forst- und Baumzuchtschädlichen Borkenkäfer (Tomicides, Lac.),' described at length the Corthyli collected by Moritz in

Venezuela and now in the Vienna Museum. It is not pleasant to apply terms of condemnation to the work of another writer; but that of Ferrari, pretentious as it is, is a mine of errors of judgment and observation. Though it was almost neglected by Eichhoff, who clearly never saw the types, it contains too many generic and specific descriptions to be wholly disregarded.

By the courtesy of Herr Ganglbauer, I have examined Ferrari's types, and, so far as the scope of the following pages admits, I have attempted to assign his genera and species to their proper positions. None of the former, other than *Brachyspartus*, is adopted; but *Cosmocorynus*, here regarded as a subgenus of *Pterocyclon*, will probably be accepted as a distinct genus on the examination of more abundant material.

For reasons before specified, a table of the genera is difficult to construct, and in cases of doubt the fuller generic diagnoses should be consulted.

Elytra not explanate or produced at apex, at most emarginate or divaricate at the extremity of the suture; prothorax anteriorly gradually convex and declivous.

Antennal club acuminate or elongate.

Club acuminate or cheliform; funiculus 1- or 2-jointed . . . . . *Brachyspartus.*

Club elongate; funiculus 3-jointed . . . . . *Glochinocerus.*

Antennal club variously constructed, but neither acuminate nor elongate.

Apical border of elytra entire; funiculus 1-jointed.

Anterior tibiæ not serrate throughout; tarsi not elongate . . . . . *Corthylus.*

Anterior tibiæ closely serrate throughout; tarsi long and slender . . . *Metacorthylus.*

Apical border of elytra emarginate or divaricate at the extremity of the suture.

Funiculus 2-jointed; prothorax cylindrical behind the middle . . . . *Pterocyclon.*

Funiculus 3-jointed; prothorax curved from base to apex . . . . . *Tricolus.*

Elytra explanate or produced at apex; prothorax (except in *A. collaris*) strongly declivous at apex, covering the head, or produced forwards; funiculus 3- (rarely 2-) jointed; form elongate . . . . . *Amphicranus.*

CORTHYLUS.

Corthylus, Erichson, Wiegm. Arch. ii. 1, p. 64 (pars) [1]; Eichhoff, Berl. ent. Zeitschr. 1868, p. 279 [2]; 1869, p. 297 [3]; Rat. Tom. p. 421 [4]; Leconte, Rhynch. N. Am. p. 347 [5].

Corthylus, subgen. *Pseudocorthylus*, Ferrari, Borkenk. p. 59 [6].

Morizus, Ferrari, Borkenk. p. 69 [7].

Crypturgus, Zimmermann, Trans. Am. Ent. Soc. 1868, p. 142 [8].

Cryphalus (group A, subgroup 2), Leconte, Trans. Am. Ent. Soc. 1868, p. 154 [9].

This genus was founded by Erichson [1] in 1836 for two species, *Bostrichus compressicornis*, Fabr., and *B. fasciatus*, Say, the latter of which has since been removed to *Pterocyclon*. Much uncertainty formerly existed as to the limits of this

and other Corthylid genera; and these questions form the subject of a valuable critical paper by Eichhoff [3], who correctly identified the type of the genus, *Bostrichus compressicornis*, as I have satisfied myself by an examination of Erichson's actual type-specimen. He did not, however, see, and could only deal conjecturally with, those described by Ferrari. None of the latter's species of *Corthylus, sensu lato*, belong to the genus, except his *Pseudocorthylus*, but of these one, *P. glabratus*, Ferr., belongs to *Pterocyclon*. Leconte correctly identified the genus, although he made an error in supposing *C. punctatissimus* to be its type (*cf.* Trans. Am. Ent. Soc. 1868, p. 144).

The confusion which has surrounded this distinct genus has been largely due to ignorance of the sexual characters. The previous application of these was reversed by Hopkins (Canad. Ent. 1894, p. 277) for two North-American species, and his determinations by dissection clearly hold good for all. Eichhoff seems never to have seen a male of any species. The body in *Corthylus* is somewhat robust, never elongate. The forehead is subconvex in the male, excavate and often pilose in the female; the eyes are usually large, and extend below to the buccal region. The antennæ in both sexes have a single nodose joint representing the funiculus, and a flattened club, with two well-marked transverse, curved, or sinuate sutures on the outer face, often scarcely visible on the somewhat concave inner face, and sometimes with traces of a third suture near the apex of the outer face. In the male the scape is slender and the club small, nearly symmetrical oval or obovate, and without fringes. In the female the scape is enlarged into an oblong or subtrigonate plate; the club is very large, concave on its inner face, which is sometimes furnished with spongy patches, apparently sensory, and differing in situation in different species, and is of irregular shape, impossible to define with any precision, usually rounded triangular or subreniform, being produced on the lower side of the axial line, the upper and apical borders being either conjointly rounded or else separated by a rounded angle, the lower border being sinuate or angulate near its base. In the females of most species the club is furnished with a fringe or flagellum of long cirri, arising from the upper limb of the inner surface and often matted together so as to simulate a spine. This flagellum is usually folded round the apical border of the club, which serves as a convenient index to its length. In those which have the flagellum absent or ill-developed, the club is smaller and not transverse. The hind angles, and usually the base, of the prothorax are bordered, the border in the males being continued forward along the sides; the apex in the males is usually furnished with two small prominent tubercles; the prosternum is excised in front up to the anterior coxæ. The elytral declivity is convex or retuse, and never produced, emarginate or divaricate at the suture. The femora are not robust; the tibiæ are slender, scarcely widened apically, and armed with two or three teeth at the upper apical angle. The tarsi are rather short.

The previously-described species amount to twelve, of which three are from the

Southern United States and the remainder from Tropical South America. We have received nine from Central America, of which all but one are new.

As I have been so fortunate as to see the types of all described species, except two from North America, I have drawn up a complete table of them, with the exception of *C. spinifer*, Schwarz, which is unknown to me, and have recharacterized those of Ferrari, so far as necessary.

The habits of *C. punctatissimus* (Zimm.) have been described by Merriam (Am. Nat., Jan. 1883); and those of *C. columbianus*, Hopk., by Hopkins (W. Va. Agric. Exp. Stat., Bull. 36).

1.	Forehead subconvex; antennal club small, oval or obovate. (*Males.*)	2.
	Forehead excavate or impressed, often densely pilose; antennal club very large, asymmetrical, trigonate, subsecuriform or subreniform. (*Females.*)	14.
2.	Elytra subtruncate at apex, with two series of strong tubercles .	[*excisus*, Ferr.]
	Elytral declivity with no strong tubercles	3.
3.	Apex of prothorax bituberculate	4.
	Apex of prothorax not bituberculate	10.
4.	Prothorax black or piceous, at most with apex slightly lighter .	5.
	Prothorax wholly or partly rufous or testaceous	7.
5.	Apical margin of elytra subtransverse	*flagellifer*, sp. n.
	Apical margin of elytra rounded	6.
6.	Declivity of elytra with a shallow impressed area on each side of the suture: length over 4 millim.	*ptyocerus*, sp. n.
	Declivity with a narrow striate impression on each side of the suture: length 3 millim.	*panamensis*, sp. n.
7.	Elytra ferruginous, narrowed posteriorly, fully one-half longer than the prothorax	[*redtenbacheri*, Ferr.]
	Elytra black, the apex sometimes rufescent, less than one-half longer than the prothorax	8.
8.	Declivity of elytra rufescent, impressed along the suture . . .	*collaris*, sp. n.
	Declivity black, not impressed	9.
9.	Prothorax uniformly rufous; declivity of elytra not tuberculate .	*rubricollis*, sp. n.
	Prothorax infuscate in front; declivity of elytra with minute tubercles	*parvulus*, sp. n.
10.	Declivity of elytra uniformly convex	[*punctatissimus*, Zimm.]
	Declivity subimpressed on each side of the suture	11.
11.	Ferruginous, the apex of the prothorax and elytra infuscate . .	[*discoideus*, sp. n.]
	Concolorous	12.
12.	Elytra about twice as long as the prothorax	13.
	Elytra less than twice as long as the prothorax	[*letzneri*, Ferr.]
13.	Castaneous; the antennal club broad oval	[*castaneus*, Ferr.]
	Black; the antennal club narrow oval	[*columbianus*, Hopk.]

14.	Antennal club with a fringe or flagellum of long cirri	15.
	Club with no fringe of long cirri	26.
15.	Apex of elytra retuse, with a complete circular margin; flagellum very long	*compressicornis,* Fabr.
	Apex of elytra with no complete circular margin	16.
16.	Apical margin of prothorax sinuate-emarginate	[*transversus,* Eichh.]
	Apical margin of prothorax entire	17.
17.	Antennal flagellum very long, extending (when folded over) far beyond the lower apical angle of the club	18.
	Antennal flagellum or fringe extending at most to the lower apical angle of the club	21.
18.	Elytral declivity broadly impressed on each side of the suture . .	19.
	Declivity with a feeble narrow impression on each side of the suture	[*papulans,* Eichh.]
19.	Elytra twice as long as the prothorax	[*macrocerus,* Eichh.]
	Elytra not more than one-half longer than the prothorax . . .	20.
20.	Antennal club triangular	[*abbreviatus,* Eichh.]
	Antennal club rounded.	*flagellifer,* sp. n.
21.	Antennal club triangular	22.
	Antennal club rounded or subreniform	23.
22.	Form robust, oblong-oval; forehead finely pubescent	*ptyocerus,* sp. n.
	Form slender, oblong; forehead densely pilose	[*redtenbacheri,* Ferr.]
23.	Antennal club rounded, broader than long, with a flagellum extending (when folded over) to the lower apical angle . . .	*luridus,* sp. n.
	Antennal club subreniform, longer than broad, with a fringe extending little beyond the upper apical angle	24.
24.	Forehead densely pilose; fringe of antennal club arising from a large part of the inner face	*comatus,* sp. n.
	Forehead not densely pilose; fringe of antennal club arising from the superior border only and inconspicuous	25.
25.	Black or piceous; elytral declivity with small tubercles	*panamensis,* sp. n.
	Rufous, the elytra piceous; declivity not tuberculate	*rubricollis,* sp. n.
26.	Ferruginous-pitchy; elytra finely punctured	[*fuscus,* sp. n.]
	Black; elytra rather strongly punctured	27.
27.	Forehead weakly punctured; elytral declivity tuberculate . . .	[*columbianus,* Hopk.]
	Forehead strongly punctured; declivity not tuberculate	[*punctatissimus,* Zimm.]

Division I.

Antennal club in the female very large, broader than long, rounded or trigonate, more or less evidently 4-articulate when viewed from the outer face, furnished with a fascicle of long cirri, arising from the superior limb of the inner face and often aggregated into a flagellum sometimes more than twice the length of the club.

To this division belong, besides the species referred to in detail subsequently, *C. macroceros*, *C. abbreviatus*, *C. transversus*, and *C. papulans*, all described by Eichhoff;

C. excisus (Ferr.), described from a single male specimen, may also be conjecturally referred to this section. It is sufficiently defined and recognizable by Ferrari's description.

In *C. comatus* the club appears to be triarticulate, is less transverse, and is pilose on the inner face, the hairs not being aggregated into a marginal flagellum. This species forms a link with those of Division II.

1. **Corthylus compressicornis.** (Tab. VIII. figg. 1, ♀; 1 *a*, antenna, ♀.)

Bostrichus compressicornis, Fabr. Syst. El. ii. p. 388 [1].

Corthylus compressicornis, Er. Wiegm. Arch. ii. 1, p. 64 (sine descr.) [2]; Eichh. Rat. Tom. p. 422 [3].

Hab. Panama, Bugaba (*Champion*).—South America [1].

Mr. Champion took three females at Bugaba, which have been compared both with the Fabrician type of the genus and species, now in the Berlin Museum, and the example in Chapuis's collection, fully described by Eichhoff. It is the only *Corthylus* in which the elytra have the apex retuse and bordered with a complete circular margin, as in several species of *Xyleborus*. The inner face of the antenna, beyond the second suture, is covered with a sensitive patch *. The male is unknown.

2. **Corthylus flagellifer**, sp. n. (Tab. VIII. figg. 2, ♂; 2 *a*, antenna, ♂; 3, antenna, ♀.)

Oblongus, subglaber, sat nitidus, niger, prothoracis apice et elytris nonnumquam piceis, antennis et pedibus ferrugineis; prothorace postice subopaco; elytris subtilissime lineato-punctatis, apice fortiter deflexo, punctato, utrinque impresso, glabro, marginibus suturalibus elevatis.

Long., ♂ 2·2–2·4 millim., ♀ 2·3–2·9 millim.

Mas. Fronte subconvexa, glabra, antennarum clava ovali, prothoracis apice bituberculato.

Fem. Fronte concava, ad verticem pilis flavis dense fimbriata, antennarum clava subsecuriformi, marginibus rotundatis, flagello longissimo ornato.

Oblong, glabrous, rather shining. Front (♂) subconvex, reticulate, punctured, glabrous, except for a thin oral fringe; antennæ ferruginous, the club obovate, its sutures a little curved, the inner face slightly concave; front (♀) concave, thinly hairy below, the sides above and vertex with a close fringe of curled shining yellow hairs, parted in the middle. Antennæ ferruginous, the scape triangular, flattened, truncate, fringed, the club broad, subsecuriform, the superior and apical margins conjointly rounded, the inferior margin nearly straight, the inferior apical angle rounded but evident; the superior margin with a flagellum of hairs curled inwards and more than twice the length of the club. Prothorax as broad as long, subcircularly rounded in front, the apex rather more prominent and bituberculate in the male, the sides parallel behind the middle, the base subtruncate and finely margined; disc with a transverse median elevated line, black, usually with the apex rufescent, its anterior third asperate, the asperities not strongly transverse, the remainder rather dull, with indistinct scattered punctures. Scutellum rounded triangular, shining black or piceous. Elytra as wide as the prothorax and rather less than one-half longer, the sides subparallel, not narrowed posteriorly, strongly inflexed apically, with rounded

* In the Plate the inner face of the antenna is represented in each case, and the sutures are indicated only so far as they can be made out in the specimen figured. The representation of these antennæ has been attended with difficulty, and some amount of foreshortening may exist in certain figures, although this has been overcome as far as possible.

angles, the hind margin subtruncate, produced at the suture; surface cylindrico-convex to the posterior third, black or fusco-piceous, shining, glabrous, subreticulate, and indistinctly punctured in rows; apex strongly deflexed, subimpressed near the suture, the margins of which are elevated, rather strongly punctured, and somewhat gibbous above at the sides, without setiferous tubercles. Underside piceous, the legs ferruginous.

Hab. Mexico, Toxpam (*Sallé*); Guatemala, San Gerónimo, Pantaleon (*Champion*); Panama, Boquete (*Champion*).

Seven examples, three of which are from San Gerónimo. I have another from tobacco-refuse. The female of this species is allied to, and might be mistaken for, *C. papulans*, Eichh.; it is separated by the frontal fringe of hairs and the subtruncate declivity of the elytra, which is entirely glabrous and more strongly punctured, with the sutural margins distinctly elevated. A male specimen from Boquete is smaller and shorter; the elytra are rufescent behind, more diffusely punctured, less impressed on either side of the declivity, with the suture less strongly elevated.

The two examples, both males, from Toxpam, also differ from the single male from San Gerónimo, being larger and more robust, with the elytra more strongly punctured towards the base, more widely impressed behind, with the suture less strongly raised and the elevated sides perceptibly though feebly tuberculate. I have not observed any sensitive patch on the antennal club in the female of this species.

3. **Corthylus luridus,** sp. n. (Tab. VIII. fig. 4, antenna, ♀.)

Fem. Breviter oblonga, sordide fusca, prothoracis basi dilutiore; fronte concava, pube brevi ornata; antennarum clava transverse subovali, fimbriata; prothorace semielliptico, supra posterius vix nitido, lævi; elytris sat nitidis, sine ordine punctatis, apice fortiter declivi, subdeplanato, infra marginato, tuberculis sparsis ornato.

Long. 2·4 millim.

Female. Short, oblong, subcylindric. Head fuscous-black, broadly hollowed in front to the level of the eyes, with fine erect pubescence, the median line indistinct, eyes small; antennæ testaceous-brown, the flattened scape truncate at apex with the lower angle prominent, club transverse, suboval, its margin forming a continuous curve sinuate on the lower side above its attachment to the funiculus, the sutures curved, the outer face convex, apparently 4-articulate, the joints separately convex and the terminal one with a superficial groove parallel to the last suture, the inner face concave, shining, its superior edge with a thin flagellum of fine cirri curving round the apex and a little longer than the club. Prothorax as long as wide, truncate and not margined at the base, slightly widened at the sides before the base, and rounded from behind the middle to the apex in an elliptic curve; surface infuscate, its posterior half and the extreme apex obscure testaceous, very gradually declivous in front, the median elevation scarcely traceable, its anterior third asperate, the asperities very weak from there to the middle, the posterior half somewhat dull, impunctate, slightly impressed on either side towards the margined hind angles. Scutellum triangular, fusco-testaceous. Elytra as wide as the prothorax and one-fourth longer, their sides gently rounded, but not narrowed posteriorly, inflexed behind in a rounded angle to form the sinuate apical margins which meet at the suture in a very obtuse angle; surface cylindrico-convex, the apical third declivous, dull brown-testaceous, darker along the sides, with fine irregular punctuation, the interspaces finely reticulate; declivity slightly flattened, margined below, gibbous at the sides above, with three or four setiferous tubercles on each elevated sutural border and several towards the outer limb. Underside piceous, legs testaceous.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One example. In this species the joints of the antennal club are individually convex on their outer face, the apical one being incompletely divided into two; unless they are carefully examined, it might be supposed that they were separated as in *Phlœotribus*. It is from an antenna of this kind that Ferrari drew the characters of his genus *Morizus*. The inner face of the club shows an oblique streak of sensitive surface, surrounded by a shallow groove.

4. **Corthylus ptyocerus,** sp. n. (Tab. VIII. figg. 5, ♂; 5 *a*, antenna, ♂; 6, antenna, ♀.)

Oblongo-ovalis, niger, antennis pedibusque ferrugineis; prothorace semi-elliptico, dorso medio linea transversa elevata, antice rugulis longis transversis asperato, postice parum nitido, obsolete punctato; elytris nitidis, irregulariter distincte punctatis, punctis hic illic in lineas ordinatis, declivitate convexa, præter suturam impressa, lineato-punctata, marginibus impressionis tuberculatis.

Long. 4·2 millim.

Mas. Fronte subconvexa, punctata; clava antennali ovali; prothoracis apice bituberculato.

Fem. Fronte ad oculos impressa, dense pilosa; antennarum clava permagna, late subtriangulari, marginibus superiore et apicali cirratis; prothoracis apice inermi.

Oblong-oval, black, the antennæ and legs ferruginous. Forehead (♂) subconvex, rufescent, subnitid, punctured, glabrous; eyes coarsely granulate, deeply emarginate, extending below to the buccal orifice; antennæ inserted in the ocular emargination, the scape scarcely thickened apically, the club obovate, apparently 4-articulate, the basal suture nearly straight, the others curved, the outer face with thin short pubescence, the inner face with the basal suture alone distinct. Forehead (♀) impressed to the eyes, rufescent, with close short erect pubescence, the raised side-margins and a median carina shining, mouth not fringed; antennal scape broadly dilated, truncate, the lower apical angle acute; club very large, broadly triangular, the lower margin bisinuate, the apical margin transverse, joining the curved superior margin by a rounded angle, the latter fringed with cirri curling round the apex, but scarcely reaching its lower angle; the outer face shortly pubescent, with three curved sutures, the inner face with the apical half almost entirely covered with a large sensitive patch. Prothorax as broad as long, widest near base and narrowed anteriorly, the sides and apex elliptically rounded, with a sinuate anterior opening, the apex (♂) more convex and bituberculate, the apex (♀) more obtuse and simple, the basal border bisinuate and margined; surface with a postmedian transverse elevated line, black, the apex sometimes lighter, with short scattered hairs, the anterior two-thirds with very transverse imbricate asperities, the posterior third rather dull, obsoletely punctured. Scutellum large, triangular. Elytra as wide as the prothorax and less than one-half longer, closely applied to it at base, the sides gently rounded, scarcely narrowed behind, and strongly inflexed to the obtuse apex; surface subconvex from base, strongly but not abruptly convex behind, black or piceous, shining, irregularly and distinctly punctured, more closely at the base, becoming lineate-punctate towards the apex; declivity flattened, subimpressed, and with two rows of punctures on each side of the suture, margins of the suture and the impressions somewhat elevated, each with three or four piliferous tubercles. Underside black, with rather long pubescence; prosternum elevated in front of the coxæ.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One male and three females were taken. This interesting species shows in the latter sex a more striking antennal development than does any other *Corthylus*. The club measures as much as 1 millimetre in width.

5. **Corthylus comatus,** sp. n. (Tab. VIII. fig. 7, ♀, antenna.)

Fem. Oblonga, subovata, picea, antennis pedibusque ferrugineo-testaceis; fronte densissime flavo-villosa; clava antennali intus pilosa; elytris posterius minus angustatis, apice obtusis, sat dense irregulariter punctatis, declivitate juxta suturam subimpressa, lineato-punctata, subglabra, haud tuberculata.
Long. 3·1 millim.

Female. Oblong, subovate, deep piceous. Forehead impressed and set with concentric rows of close, short, erect, shining, yellow hairs; antennæ ferruginous, the club oblique subreniform, the upper and apical margins obliquely and conjointly rounded, the lower margin subangulate, apparently triarticulate, the upper half of the inner face with close yellow hairs, scarcely produced beyond the apical angle, the outer face shortly pubescent. Prothorax as long as broad, the apex subelliptically rounded and bisinuate, the sides parallel behind the middle, the base truncate; disc with the postmedian elevated line short, its anterior half asperate, the asperities not very transverse, the posterior half scarcely visibly punctured. Scutellum not small, rounded triangular. Elytra one-third longer than the prothorax, the side-margins slightly rounded and narrowed behind, inflexed in a rounded angle to the obtusely-rounded apex; surface with rather strong close irregular punctuation; declivity convex, subimpressed, and with two rows of punctures on either side of the suture, gibbous towards the sides, not tuberculate, and with very few hairs. Underside piceous-black, the abdomen rufescent. Legs ferruginous.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

One specimen. This species is distinguished from those most nearly resembling it by the dense villosity of the forehead and the inner face of the antennal club, which shows no sensitive patch.

[To this division belongs *C. redtenbacheri* (Ferr.) and perhaps *C. castaneus* (Ferr.), both from Venezuela, of which a short account is given to supplement Ferrari's descriptions.

Corthylus castaneus.

Pseudocorthylus castaneus, Ferr. Borkenk. p. 59, ♀ (lege ♂) nec ♂[1].

Male. Oblong, rather elongate, castaneous. Head infuscate, somewhat dull, moderately strongly punctured, the punctures obsolete towards the mouth, above which is a transverse impression; antennal club rather broad-oval or subrhombiform, with two oblique sutures, the basal suture nearly straight, the other slightly curved. Prothorax as long as broad, semielliptic, obliquely narrowed forwards from behind the middle, base finely margined and subtruncate, lateral border very fine, deflexed; surface with a transverse postmedian elevation, the anterior half with moderately transverse asperities, the posterior half subopaque, impunctate. Elytra two-thirds longer than the prothorax, scarcely narrowed at base, subampliated about the middle, scarcely narrowed behind, inflexed at apex, the apical margin very obtusely rounded and finely bordered; surface with moderately deep irregular punctuation; declivity convex, thinly pilose, subimpressed on either side of the suture and lineato-punctate, the subelevated sutural margins and sides with a few small tubercles.
Long. 3·7 millim.

Hab. VENEZUELA[1] (*Mus. Vind. Cæs.*).

This species somewhat closely resembles *C. columbianus*, Hopk., from the United States; the chief difference (apart from colour, which is of doubtful value) being in the antennal club, which is narrower in *C. columbianus*, with nearly straight sutures. I have not seen sufficient examples of the two forms to be able to decide whether they are really distinct. *C. columbianus* comes in the next division.

Corthylus redtenbacheri.

Mas. *Pseudocorthylus redtenbacheri,* Ferr. Borkenk. p. 60 (nec var.) [1].

Fem. *Pseudocorthylus castaneus,* Ferr. Borkenk. p. 59, ♂ (lege ♀) nec ♀ [2].

Similar in colour to *C. castaneus*, but smaller, with the elytra less elongate, more narrowed behind, and gradually incurved to the more rounded apical margin, the declivity more convex, not impressed on each side of the suture nor tuberculate. Head (♂) concealed in the type, the antennal club oval, with transverse sutures; head (♀) with a circular frontal impression, margined with a ring of stout, erect, curved hairs and more thinly pubescent in the middle, antennal club very transverse, trigonate, its apical border sinuate, with a thin flagellum of recurved hairs rather longer than the width of the club, the sutures sinuately curved. Prothorax transverse, subcircularly rounded in front, parallel-sided behind, transverse and finely bordered at base, apex (♂) bituberculate; surface convex, the transverse elevated line fine, moderately shining behind the middle and very feebly punctured. Elytra one-third longer than the prothorax, more finely punctured than in *C. castaneus*, with the apex different in structure; declivity just perceptibly flattened on each side, with two rows of punctures.

Long. 2·7 millim.

Hab. VENEZUELA [1 2] (*Mus. Vind. Cæs.*).

I have little hesitation in associating together as sexes the above forms. In the type of the female the flagellum is curved so as to touch the inner angle of the club; Ferrari has consequently described the club as being furnished with a semi-lunar fenestra in the last joint!

Corthylus letzneri (*Pseudocorthylus letzneri*, Ferr.), represented by three male examples in the collection of the Vienna Museum, is very like the above species, but is blackish-piceous, with the apex of the prothorax not tuberculate, the elytral punctures tending to form rows, the apex more obtuse, the declivity slightly impressed on each side and with only a single row of weak punctures close to the suture.]

Division II.

Antennal club in the female smaller, not transverse, apparently triarticulate, at most with a few longer hairs on the upper limb of the inner face (*C. panamensis* and *C. rubricollis*).

To this division belong *C. punctatissimus* (Zimm.) and *C. columbianus*, Hopk., which do not occur in our region.

6. **Corthylus panamensis,** sp. n. (Tab. VIII. fig. 8, ♀, antenna.)

Oblongo-ovalis, nigro-piceus, antennis pedibusque ferrugineis; prothorace semielliptico, antice rugulis elongatis in lineas concentricas ordinatis ornato, postice subopaco; elytris nitidis, tenuiter lineato-punctatis, apice convexe declivi, sparse piloso, vix distincte tuberculato, stria suturali impressa.

Long. 3 millim.

Mas. Fronte subconvexa, punctata; prothoracis apice bituberculato.

Fem. Fronte impressa, punctata, pube brevi vestita, linea media lævi; antennarum clava majore, marginibus superiore et apicali conjunctim rotundatis.

Oblong-oval, piceous or piceous-black, the antennæ and legs ferruginous. Head (♂) subconvex, rufescent above, somewhat dull, punctured; eyes rather small; antennal club oval, with nearly straight sutures. Head (♀) impressed in front, punctured and covered with short erect pubescence, the median line shining, sometimes subelevated; eyes larger; antennal scape rather short, flattened, and dilated; the

club not very large, oblique oval, the superior and apical margins rounded in a common curve, the inferior margin sinuate, the sutures curved, fringe short and inconspicuous, inner surface (except for a streak on the apical joint) sensitive. Prothorax broader than long, almost parallel-sided behind, broadly rounded in front, the anterior opening slightly sinuate, apex bituberculate in the male, the basal margin scarcely sinuate; surface with a postmedian transverse subelevated line, anteriorly with very long transverse imbricate wrinkles, shorter in the male, arranged almost in concentric lines, posteriorly finely reticulate and slightly dull. Elytra similar in shape to those of *C. ptyocerus*, but with the sides gradually flexed into the more rounded apex; surface finely punctured in rows, the interstices with an occasional setiferous puncture; declivity very slightly flattened from side to side, sometimes with one or two shallow striæ along the suture, and with scattered setæ arising from scarcely perceptible tubercles.

Hab. GUATEMALA, Zapote, Volcan de Atitlan (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Mr. Champion took seven examples of this species on the Volcan de Chiriqui and one at Bugaba, all females; and three males in Guatemala.

As males and females have never been found in the same locality, the fact of their being sexes of the same species is not proved, but it cannot be doubted when the specimens are examined side by side.

The specimens vary in the distinctness of the striæ found on the declivity, which are obsolete in some examples, and best marked in those from Zapote.

The female is separable from *C. comatus*, ♀, by the absence of the thick hairs on the inner face of the antennal club, and of the dense frontal pubescence.

7. **Corthylus rubricollis,** sp. n. (Tab. VIII. fig. 9, ♀, antenna.)

Oblongus, nitidus, rufo-ferrugineus, scutello nigro-marginato; elytris nigris, subtiliter sine ordine punctatis, declivitate subglabra, vix impressa, sutura subelevata.

Long. 2·7–3·1 millim.

Mas. Fronte subconvexa, prothoracis apice bituberculato.

Fem. Fronte concava, pube tenui flava vestita; antennarum clava subreniformi.

Oblong, ferruginous-red, the elytra black. Forehead (♂) subconvex, dull, punctured, the mouth fringed, the mandibles black; antennal scape blackish, the club ferruginous, rather broad, with straight sutures. Forehead (♀) impressed, not deeply, covered with fine erect yellow hairs; antennæ pitchy-red, the scape moderately widened, the club not very large, obliquely subreniform, with bisinuate inferior border, apparently three-jointed, shortly pubescent, and with a few cirri springing from the upper border of the inner face and not longer than the club; inner face reticulate, with no porous patch. Prothorax as long as broad, truncate and finely margined at the base, the sides slightly converging behind, regularly rounded forwards from behind the middle, anterior margin bituberculate in the male; surface with an indistinct postmedian elevated transverse line, in front with not very transverse asperities, behind smooth and rather dull. Scutellum triangular, rufous, with black side-margins. Elytra at base a little narrower than the prothorax and less than one-half longer, slightly curved at the sides and gradually rounded behind to the obtuse apical border; surface shining, with fine irregular punctuation; declivity convex, less shining, scarcely impressed, and with two rows of punctures on each side of the suture. Underside behind the prothorax somewhat infuscate.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Five examples. This species, easily distinguished from most others by its colour,

recalls in this respect *Xyleborus sanguinicollis*, but is separable as well by the absence of the apical spines on the elytra as by its generic characters. The cirri of the antennal club are inconspicuous and were overlooked by me; but Mr. Wilson duly observed them in drawing the antenna.

8. **Corthylus collaris**, sp. n.

Mas. Oblongus, prothorace rufo-ferrugineo, elytris nigris, antennis et pedibus testaceis; *C. rubricolli* ♂ assimilis, sed dimidio minor, angustior, capite infuscato, prothoracis apice fortius tuberculato, elytris ad apicem rufescentibus, declivitate juxta suturam fortius impressa distinguendus.

Long. 2·1 millim.

Male. Closely resembling a small example of *C. rubricollis*. Forehead infuscate, flattened, with a few fine punctures near the mouth, the oral border impressed on either side; antennæ testaceous, the club smaller and more orbicular. Prothorax a little longer than broad, more strongly rounded in front, the apical margin relatively more strongly bituberculate; its disc less ample, with an indistinct darker median shade. Elytra not narrower at the base than the prothorax, shaped as in *C. rubricollis*, with the apical border a little less obtuse; surface shining, hardly visibly punctured; declivity convex, rufescent, rather strongly impressed along the suture, the borders of which are subelevated, impression with a single row of punctures, its external borders prominent, raised into a slight callosity. Underside behind the prothorax piceous-red. Legs testaceous.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

One specimen. The eyes in this little species are less approximate below to the buccal border than in its congeners.

In the type from Guatemala the scutellum is entirely black; in another example in my possession from tobacco-refuse it is coloured as in *C. rubricollis*, but the rufous patch is less distinct.

9. **Corthylus parvulus**, sp. n.

Mas. Oblongus, nitidus, capite et prothorace fuscis, hujus apice summo et basali dimidia parte rufo-testaceis, elytris nigris, antennis et pedibus testaceis; prothoracis apice bituberculato; elytris minutissime lineato-punctatis, apice obtuso, declivitate convexa tuberculis minutis setiferis adspersa.

Long. 1·7 millim.

Male. Oblong, rather shining. Head fuscous (retracted in the type); antennæ testaceous-brown, the club rather small, orbicular-oval. Prothorax as long as broad, nearly parallel-sided behind the middle, the apex subcircularly rounded, prominently bituberculate in the middle, very slightly sinuate laterally, the base truncate; surface with a distinct median transverse elevated ruga, horizontal and slightly impressed behind it, its anterior half fuscous with the apex narrowly testaceous, granulate-asperate and very shortly pubescent, its posterior half reddish-yellow, shining, minutely punctured. Scutellum triangular, shining, black with an indistinct testaceous basal patch. Elytra as wide as the prothorax and less than one-half longer, nearly parallel-sided, the apical margin obtusely rounded; surface subcylindrical at the base, becoming declivous from the middle, black, with rows of extremely fine punctures, the sutural row more distinct; declivity convex, with scattered minute setiferous tubercles along the suture, the third and outer interstices. Underside fuscous. Legs testaceous.

Hab. GUATEMALA, Las Mercedes (*Champion*).

One specimen. This species is separated from either of the preceding by its more

cylindrical shape and the infuscate front of the prothorax. It is smaller even than *C. collaris*, and has not the marked impression present on the elytral declivity of that species.

[The following South-American species belong to Division II. :—

Corthylus fuscus, sp. n.

Fem. Oblonga, sat nitida, ferruginea vel picea ; fronte impressa, setis brevibus, erectis, flavis ornata ; antennarum clava minore, subrhomboidali, haud fimbriata ; prothorace semielliptico, haud transverso, linea transversa, elevata, in disco vix distincta, parte posteriore subopaca ; scutello magno ; elytris sat dense subtiliter punctulatis, apice fortiter convexe declivi, utrinque haud impresso, subtiliter lineato-punctato, fere glabro.

Long. 3·2 millim.

Female. In appearance resembling *C. comatus*, but stouter and of lighter colour, ferruginous or inclining to piceous. Head with short, erect, yellow pubescence, not so dense as in that species ; antennal club ferruginous, relatively small, subrhomboidal, the apex obliquely rounded, the inferior margin obtusely angulate near the base, sutures oblique, incomplete in the middle, the inner face rather shining, uniformly porous, its margin not fringed. Prothorax semielliptic, as long as broad, rather broadly rounded at apex and not constricted ; sides parallel towards the base, the latter truncate, margined ; surface with the transverse elevated line very indistinct, its hinder part subopaque, impunctate. Scutellum large, rounded triangular. Elytra scarcely one-half longer than the prothorax, sides subparallel, not narrowed behind, the apical margin broadly rounded ; surface rather more finely and closely punctured than in *C. comatus*, apex strongly declivous, convex, non-impressed, with one or two substriate rows of fine punctures on each side and scattered fine hairs, the sutural margins slightly elevated.

Hab. Brazil.

I have three specimens from Brazil tobacco. The species cannot well be confused with any other, except perhaps *C. castaneus*, which is a longer and more slender insect with the elytral declivity more oblique and impressed on each side of the suture.

Corthylus discoideus, sp. n.

Pseudocorthylus redtenbacheri, var., Ferr. Borkenk. p. 60 [1].

Mas. Oblongus, sat nitidus, rufo-testaceus, capite et prothoracis antica dimidia parte infuscatis, elytris postice et ad latera gradatim picescentibus ; statura fere *C. collaris*, prothoracis apice inermi, area basali nitida, lævi, elytris paullo longioribus, ad apicem convexioribus, sat evidenter punctatis, punctis post medium in lineas ordinatis, declivitate convexa, tenuiter pilosa, haud evidenter impressa, sutura subelevata.

Long. 1·8 millim.

Hab. Venezuela [1] (*Mus. Vind. Cæs.*).

This small species, which probably belongs to Division II., can be separated from any other by the size and colour alone. The declivity of the elytra shows a slight striate impression on each side of the suture, but not the deeper sulcus margined by an external callosity found in *C. collaris*.]

METACORTHYLUS, gen. nov.

Antennarum funiculus 1-articulatus; clava haud permagna, late obovata, 3-articulata, in pagina interna parum concava, pilis longis haud fasciculatis exstructa. Tibiæ sublineares, anticæ curvatæ, extus scabrosæ, margine serrato; tarsi longi, postremi tibiis longiores, articulo primo quam sequenti dimidio longiore. Corpus cylindricum, elytris ad apicem retusis, integris.

This genus is established for a single species, represented in our collection by one specimen, presumably a female. It approaches *Corthylus*, but cannot be included in that genus nor in the following one, *Brachyspartus*. The head is not excavate, but is flattened slightly in front and furnished with an oval elevated plaque. The antennal scape is slender, somewhat clubbed at the apex, but not strongly dilated or flattened; the funiculus is apparently composed of a single nodose joint. The club is moderate in size, not relatively larger than in a male *Corthylus*, flattened, broadish, forming almost an equilateral triangle with rounded sides; there are two sutures, curved on the outer face, almost straight on the inner face, which is but slightly concave; the apical margin is furnished with a thin fringe of long hairs which are not fasciculate but project directly forwards. The anterior tibiæ are long, slender and curved, serrate for the whole length of the outer edge, and with the outer face scabrous, as in *Pterocyclon*. The middle and posterior tibiæ are linear and scarcely serrate. The tarsi are long and slender, the hinder pair being longer than the tibiæ; the first joint is quite half as long again as either of the succeeding joints. The body resembles that of the more cylindrical *Corthyli*, such as *C. excisus* (Ferr.). The prothorax is not margined at the sides, hind-angles, or base. The elytra are retuse at the apex, and are neither emarginate nor divaricate at the suture.

1. **Metacorthylus nigripennis,** sp. n. (Tab. VIII. figg. 10; 10 *a*, antenna.)

Fem. (?). Oblonga, cylindrica, opaca, ochrea, ore et prothorace apicem versus infuscatis, elytris nigris; prothorace ad apicem rotundato, postice parallelo; elytris vix perspicue punctatis, postice haud angustatis, ad apicem retusis, retusione ovali, haud acute marginata, medio longitudinaliter impressa, utrinque bituberculata.

Long. 3 millim.

Female (?). Oblong, cylindric, dull, the entire surface with close microscopic reticulation. Head brown-yellow, subimpressed over the mouth, and with a raised oval shining patch above the impression; mouth infuscate, fringed; eyes convex, rather broad, emarginate; antennæ infuscate. Prothorax oblong, rather obtusely rounded in front, without apical tubercles, parallel-sided behind the middle, with rounded-rectangular hind-angles, the base sub-bisinuate, not bordered; surface with a slight ante-median transverse elevation, convex in part, cylindrical behind, dull ochreous, the convex anterior portion with an ill-defined infuscate patch, and rough with small close granules, neither transverse nor in concentric lines, the basal half scarcely visibly punctate. Scutellum minute, triangular, black. Elytra as wide as the prothorax and about one-fourth longer, truncate at base, with narrowly rounded shoulders, parallel-sided, not narrowed behind, strongly and almost abruptly inflexed to the obtuse apical margin; surface cylindrical, black, inconspicuously punctured, subtruncate at apex; the declivity longitudinal oval, with defined but not acute side-margins, sub-impressed along the suture, slightly raised and bituberculate on each side, its surface subrugose and finely pubescent. Underside and legs ochreous.

Hab. PANAMA, Bugaba (*Champion*).

The funiculus is one-jointed, but there appears to be a groove on the outer face only of the pedicle of the club, which may be an incomplete expression of a second joint. It is, however, impossible to satisfy oneself, even with high magnification, whether the line visible is a groove or a displaced hair crossing the club.

BRACHYSPARTUS.

Brachyspartus, Ferrari, Borkenk. p. 65; Eichhoff, Rat. Tom. p. 429.

This genus, established for the reception of a single species, *B. moritzi*, Ferr., from Venezuela, is allied to *Corthylus*, from which it is distinguished by the possession in both sexes of an antennal club of a rounded lozenge-shape, longer than broad and pointed at its apex, and of tibiæ which have the upper border curved and finely serrate for its whole length, the hinder pairs being flattened and widened towards the apex. The tarsi are short, with the basal joint scarcely longer than either of the succeeding joints. In the type the body is cylindrical, with truncate elytra divaricate at the apex of the suture.

Two examples from Central America agree in possessing these characters, although the elytra differ somewhat, having a bluntly rounded declivity without divaricate sutural angles, and in one specimen the antennal club is longer and cheliform in outline. A more important distinction is the possession by both of a two-jointed funiculus; whereas that of *B. moritzi* is described and figured both by Ferrari and Eichhoff as consisting of a single joint. A close examination of the type of that species has, however, shown at least an indication of a second joint in the form of an indistinct suture separating off the pedicle of the club on its outer face. The prothorax has a narrowly-raised side-margin from the hind-angles to the anterior border; the base also is margined in *B. moritzi*, and one of our new species, *B. ebeninus*, but not in the other, *B. barbatus*; the prosternum is excised almost to the anterior coxæ.

Both sexes of *B. moritzi* are known; the male characters, according to Eichhoff, are greater acumination of the antennal club, a convex forehead, and the presence of two well-marked tubercles on the apical margin of the prothorax; the female characters, according to the same authority, are a less acuminate club, an excavate forehead, and less development of the prothoracic tubercles, which are, however, not absent. The application of these characters is presumably conjectural and may have to be revised: that derived from the prothoracic tubercles would not hold good in *Corthylus*; but, from a note made when I saw Ferrari's type, I believe that Eichhoff made a slip, and that the tubercles are more strongly developed in the sex which he calls the male. The sex of either of our specimens cannot well be determined.

1. **Brachyspartus ebeninus,** sp. n. (Tab. VIII. fig. 11.)

Sexus? Oblongus, cylindricus, nitidus, subglaber, antennis pedibusque ferrugineis; fronte concava, breviter pilosa; antennarum clava cheliformi, acuminata; prothorace antice rotundato, medio vix conspicue bituberculato, postice parallelo, dorso antice gradatim declivi, asperato, postice subimpunctato; elytris ad apicem obtusis, subtilissime punctatis, declivitate convexe subtruncata, parce pilosa.

Long. 2·3 millim.

Sex? Oblong, cylindric, shining, nearly glabrous, black, the antennæ and legs ferruginous. Forehead concave, the impression shallow, punctured and thinly pubescent, with a median shining subimpressed line, more distinct near the mouth. Antennal scape short, moderately clubbed towards the apex, not flattened; funiculus two-jointed, the second joint closely applied to the base of the club and indistinct; club moderate in size, cheliform, the superior border being continuously rounded, the inferior border strongly sinuate; surfaces uniformly pubescent, without long cirri, the inner face subconcave, rather shining; sutures two, expressed on the upper border only and not apparently crossing the club. Prothorax rather longer than broad, subcircularly rounded in front, parallel-sided behind the middle, the base sub-bisinuate, bordered; surface with no median elevation and gradually declivous in front, the apex slightly rufescent, with two small erect tubercles visible from above and behind only; anterior third asperate with short elevations, the remainder shining, with very fine sparse punctuation. Scutellum triangular, shining. Elytra as wide as the prothorax and one-third longer, subtruncate at base, with subacute humeral angles, parallel-sided and not narrowed behind, inflexed posteriorly by rounded angles to the obtuse apical margin; surface cylindrical, strongly but not abruptly declivous behind, with indistinct rows of minute punctures; declivity flattish, margined below, with somewhat distincter punctuation and a few very fine seriate hairs. Underside black, thinly pubescent. Anterior tibiæ slender, obsoletely dentate; posterior and middle tibiæ more strongly dentate.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One specimen. Owing to the impossibility of dissecting this unique example, it has been difficult accurately to determine the presence of a second joint in the antennal funiculus and the characters of the sutures on the club. It is possible that examination of an antenna mounted in balsam would alter the account given. The insect has a decided resemblance to the male of *Scolytoplatypus daimio*, Blandf., from Japan, in form and the shape of the antennæ. It is, however, smaller and radically distinct in generic characters.

2. **Brachyspartus barbatus,** sp. n. (Tab. VIII. fig. 12, antenna.)

Sexus? Oblongus, cylindricus, vix nitidus, subglaber, testaceus (fortasse immaturus); fronte ad oculos excavata, epistomate bifasciculato; antennarum clava rhombiformi; elytris lineato-punctatis, ad apicem obtusis, declivitate ad suturam haud late impressa, utrinque in callum trituberculatum elevata.

Long. 2·4 millim.

Sex? About the size of *B. ebeninus*, but slightly more robust, less shining, entirely testaceous, but apparently immature. Forehead excavate to the eyes, the cavity shining, glabrous, with a narrow median carina, the epistoma furnished on each side with a fasciculus of shining hair curled upwards into the frontal cavity; eyes broad oval, emarginate; antennal scape slender, the funiculus two-jointed, the club rounded lozenge-shape, the inferior margin more strongly rounded than the superior, shortly pubescent, with a few scattered longish hairs and two distinct subtransverse sutures. Prothorax oblong, rounded at the apex, the margin of which is not tuberculate, parallel-sided behind, truncate at base, which is not margined, the hind-angles rounded; disc ample, somewhat gibbous in the middle and more convex in front than in *B. ebeninus*, anteriorly rather finely granulate, posteriorly subimpunctate, minutely reticulate. Scutellum rather large, subtransverse, rounded triangular, shining. Elytra as wide as the prothorax and one-fourth longer, truncate at base, with obtusely-rounded humeral angles, parallel-sided

and strongly inflexed behind by a rounded angle to the obtusely-rounded apical margin; surface cylindrical, strongly declivous behind, finely lineato-punctate, glabrous; declivity subconvex, nearly vertical below, narrowly impressed along the suture and raised on each side into a callus set with three small tubercles, and with a few short hairs. Legs as in *B. ebeninus*.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One example, distinguishable from the last species by the characters of the forehead and antennal club, and the sutural sulcus and tuberculate calli of the elytral declivity. As *B. barbatus* and *B. ebeninus* are from the same locality, the question suggests itself as to whether they are the opposite sexes of one and the same species. I think that this is not so, although it would be difficult to give precise reasons.

GLOCHINOCERUS, gen. nov.

Antennæ lateraliter insertæ; scapo sat longo, recto; funiculo 3-articulato; clava elongata, angusta, 3-articulata, suturis transversis; articulo ultimo cæteris sumptis fere æquali, in medio constricto. Prothorax antice oblique declivis. Elytra cylindrica, postice retusa, apice suturæ integro. Tibiæ anticæ angustæ, curvatæ, extus granulatæ, margine superiore subserrato. Tarsi graciles.

Mas. Fronte integra; antennarum clava breviore; prothoracis apice bituberculato.

Fem. Fronte excavata, fasciata; antennarum clava longiore; prothoracis apice integro.

Front deeply excavate and fringed in the female only. Antennæ inserted in the ocular emargination, with a rather long straight scape, slightly wider and flattened towards the apex in the female; funiculus short, evidently 3-articulate, the first joint cupulate, the others conical and increasing in width; club elongate (especially in the female), flattened, triarticulate, with transverse sutures, the first joint triangular, the second transverse, the third nearly as long as the others together, obtusely pointed and subconstricted in the middle. Maxillary lobe (♂) quadrate, produced at the inner apical angle into a short process densely fringed with fine curved setæ, its inner border nearly straight, with longer straight setæ; palpi inserted at the outer apical angle, the first two joints short, the third longer than broad: mentum (♂) inserted by a short triangular peduncle, long and narrow, constricted near the base, gradually widened, rounded and pilose towards the apex; ligula inserted about its middle, widened in front and surrounding the apex of the mentum; labial palpi contiguous at base, large, the first joint cupulate, subtransverse, the second nearly twice as long as broad, pilose externally, the third small, but not transverse. Prothorax obliquely declivous in front, its apex bituberculate in the male, the flanks impressed, but with no lateral raised margin; prosternum short, closely embracing the coxæ behind and subproduced in the middle. Elytra cylindrical, retuse, not emarginate or divaricate at the apex of the suture. Anterior femora broad, lobed at apex; anterior tibiæ long, slender, curved, with feeble marginal serration, the outer face subasperate; middle and posterior tibiæ widened and spatulate, the marginal serration almost obsolete. Tarsi long and slender, the first joint longer than either of the two following.

The antennal club is similar to that of *Anchonocerus* and *Phthorius*, from both of which the present genus is distinguished by the triarticulate funiculus and subretuse elytra, without apical emargination. The same characters distinguish *Glochinocerus* from *Pterocyclon*; and it is at present one of the best-marked genera in the Corthyli.

Two species have been taken in Central America.

1. **Glochinocerus retusipennis,** sp. n. (Tab. IX. figg. 1, antenna, ♂; 2, ♀; 2 *a*, antenna, ♀; 2 *b*, apex of elytra, ♀.)

Oblongus, cylindricus, subnitidus, fuscus, prothoracis disco, elytrorum lateribus et apice obscurioribus; pro-

thorace latitudine longiore, postice lævi, subopaco; elytris subtiliter punctatis, ad apicem subretusis. retusione ad latera et infra marginata, subopaca, glabra, utrinque juxta suturam linea tuberculata ornata.

Long. 3·6–4 millim.

Mas. Fronte subdeplanata, haud cirrata; prothoracis apice bituberculato.

Fem. Fronte concava, pilis fulvis cirratis in fasciculos ordinatis compta.

Oblong, cylindrical, subglabrous, dull brown with a testaceous tinge, the head, disc of prothorax, and sides and apex of the elytra darker. Front (♂) somewhat flat, punctured, thinly pubescent, with a median supra-oral raised line; front (♀) deeply excised, its margins with four brushes of fulvous hairs curled inwards, one rising from each side of the upper border and one above each mandible; the latter strong, black, larger in the female; eyes oval, emarginate; antennæ testaceous-brown, the scape more flattened and the club longer in the female. Prothorax longer than broad, widest behind the middle, the sides scarcely rounded, the apex circularly rounded, and in the male bituberculate, the hind angles subrectangular, the hind margin sub-bisinuate; surface with a median transverse elevated line, in front asperate, more strongly in the male, behind opaque, impunctate. Scutellum rather large, rounded-triangular. Elytra as wide as the prothorax and less than one-half longer, with subtruncate base, obliquely rounded shoulders, and sub-parallel sides, strongly inflexed behind, the apical margin therefore obtuse; surface cylindrical, with very fine and rather close punctuation in indistinct rows; apex subretuse, nearly vertical, with a defined circular margin at the sides and beneath, but obsolete above, its surface opaque, glabrous, impunctate, impressed above along the suture, on each side with a raised tuberculate line, beginning at the upper extremity of the marginal border, then running parallel to the sulcus, below incurved and less distinct. Underside and legs testaceous, the tibiæ more distinctly spined in the male.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

Two pairs were obtained. As this species is like the next, of which the colour is darker, it is probable that these examples have not reached maturity. The sexes have been determined by dissection, and the result agrees with the observations of Hopkins on the sexual characters of *Corthylus* and *Pterocyclon*.

2. **Glochinocerus gemellus,** sp. n.

Fem. Oblonga, cylindrica, subnitida, nigro-fusca, antennis pedibusque fusco-testaceis; *G. retusipenni* assimilis, pilorum fasciculis inferis in fronte densioribus, elytris proportione longioribus, declivitate in singulo elytro gibbosa, sine ordine tuberculata, linea elevata nulla, distinguenda.

Long. 3·8–4 millim.

Female. Very like the female of *G. retusipennis*. Oblong, cylindrical, blackish-fuscous, with the legs and antennæ testaceous, and the frontal fringe bright red-brown; o wholly black, with the legs, antennæ, and fringe infuscate. Head with the insertion of the antennæ less near the mouth, and the brush of hairs arising above it wider and denser. Prothorax with the discal transverse line less noticeable. Elytra relatively a little longer, more accurately parallel-sided, the suture impressed before the declivity, the surface more evidently punctured; apical surface more rounded above, with the side-margin not traceable above the middle, opaque, impressed along the suture to the middle, laterally convex, and with scattered minute piliferous tubercles, the elevated line absent.

Hab. GUATEMALA, Quiché Mountains, Volcan de Agua (*Champion*).

A single example was taken at each locality. That from the Quiché Mountains is the darker, and has the antennal club entirely black, whereas it is testaceous in the other. The difference of colour, especially noticeable in the frontal fringe, is not accompanied by any difference in structure.

PTEROCYCLON.

Corthylus, Erichson, Wiegm. Arch. ii. 1, p. 64 (pars) [1]; Ferrari, Borkenk. 1867, p. 49 (pars) [2].
Monarthrum, Kirsch, Berl. ent. Zeitschr. 1866, p. 213 [3], 1868, p. 214 [4]; Leconte and Horn, Rhynch. N. Am. p. 347 [5].
Corthylomimus, Ferrari, Borkenk. 1867, p. 48 [6].
Cosmocorynus, Ferrari, ibid. p. 62 [7].
Pterocyclon, Eichhoff, Berl. ent. Zeitschr. 1868, p. 277 [8], 1869, p. 299 [9]; Rat. Tom. p. 437 [10].
? *Trypocranus*, Eichhoff, Rat. Tom. p. 435 [11].

The species of *Pterocyclon* are cylindrical insects, of moderate or considerable length in proportion to their width. The antennæ possess a two-jointed funiculus and a rather small club, which is normally oval or obovate, with straight or curved sutures; its apex is not acuminate, as in *Brachyspartus*.

Exceptionally the club is reniform (*P. scrobiceps*), subtriangular, or broadly triangular (*P. fimbriaticorne*); these characters, when they occur, are probably distinctive of the female.

The prothorax is obliquely declivous in front and rather finely asperate; its hind angles are margined by a lateral line which extends forward almost to the apical border. The prosternum is short. The elytra are separately rounded at the apex, and divaricate or emarginate at the tip of the suture, exposing the pygidium; the emargination is usually shallow and the sutural margins, though separated, are not excised; there is a rounded angle where they meet the apical border. The declivity is either convex and impressed along the suture or more or less excavate, as in *Tomicus*, with very variable armature; but the apices are furnished at most with a narrow reflexed margin, and are never explanate or produced. The anterior tibiæ are curved, slightly widened apically; their superior margin is serrate, and their outer face is granulate or porcate.

The sexual characters are important. In few species have both sexes been observed, and in those the chief secondary character is the presence in the female of a fringe of hairs on the antennal club. That this is a female character has been shown for *P. fasciatum* and *P. mali* by Hopkins (Canad. Ent. 1894, p. 275). It is here assumed to hold good wherever found, but its constancy has not been proved by dissection. The elytra may be similar in both sexes, but in the female the declivity is usually less impressed or excavate, with weaker armature. Out of fifteen forms in our collection which are without any fringe on the antennal club, eleven have the elytral declivity excavate; whereas out of ten forms with an antennal fringe, presumably females, but one has a decided apical excavation (*P. lobatum*). The head is usually simple in both sexes, but is excavate, fringed with long curled hairs, or otherwise variously constructed in the females of a few species (*P. lobatum*, *P. ferrarii*, *P. fimbriaticorne*). The second of

these species belongs to Ferrari's genus *Cosmocorynus* [7], which cannot be separated from *Pterocyclon* by any non-sexual characters discoverable without dissection. *Trypocranus*, Eichh. [11], appears to be allied to *P. ferrarii* or *P. fimbriaticorne*. It is an imperfectly diagnosed genus, and the structure of the mouth-parts, as described by Eichhoff, is so abnormal as not to be accepted without confirmation.

The nomenclature of the genus must be touched on. Erichson [1], after diagnosing *Corthylus*, indicated as its components *Bostrichus compressicornis*, Fabr., and *B. fasciatus*, Say. He stated that the funiculus was one-jointed, and as this is true of *B. compressicornis*, that species is accepted as the type of the genus *Corthylus*. *B. fasciatus* has a two-jointed funiculus, and was therefore removed by Eichhoff to the present genus. In 1866 Kirsch [3] described a species of *Pterocyclon* under the name *Monarthrum chapuisi*; his generic diagnosis does not essentially differ from that of Erichson, and he repeated and preserved in his generic name the same error of regarding the funiculus as one-jointed. He simply reproduced the faulty part of Erichson's work, and, as Eichhoff has pointed out [9], his genus is not valid, and the name *Monarthrum* has no claim to priority, being, if anything, a synonym of *Corthylus*, s. str.

It was accepted by Leconte [5], who again failed to detect the two joints in the fnniculus, and has become current with American entomologists.

The species which Ferrari describes in his subgenera, *Corthylus*, s. str., and *Microcorthylus*, together with *Pseudocorthylus glabratus*, Ferr., fall into this genus; his other species of *Pseudocorthylus* belong, as before mentioned, to *Corthylus* proper. His genus *Corthylomimus* was indicated for *P. fasciatum* (Say) and *P. scutellare* (Lec.), both of which he admits to not having seen; it wholly fails.

Cosmocorynus, Ferr., has already been mentioned; this name is prior to *Pterocyclon*, but is better not employed for the whole genus, as it indicates certain aberrant forms which will probably come in time to be separated under Ferrari's name. Eichhoff is the first observer who has accurately delimited and defined the present genus [8 10], and his name is adopted.

The species of *Pterocyclon* are tolerably common in America; four occur in the Western United States, extending downwards from Lake Superior. The habits of *P. mali* (Fitch) have been described by Fitch, and more recently by Schwarz and Howard. We record twenty-three species from Central America, of which nineteen are new. The following table is confined to the species of the Central-American fauna; and it has been found desirable to separate the sexes in it under the characters afforded by the antennæ.

1.	Antennal club without any fringe or fascicle of long hairs. (*Males.*) .	2.
	Antennal club fringed or fasciculate. (*Females.*)	16.
2.	Elytra not sulcate along the suture before the declivity	3.
	Elytra with a common sulcus almost from the base of the suture . .	*sulcatum*, sp. n.

3.	Declivity of elytra excavate or retuse	4.
	Declivity convex, impressed along the suture alone, and laterally callose and bituberculate	15.
4.	Declivity excavate or retuse, with teeth or tubercles situate on the raised margins alone	5.
	Declivity retuse or subexcavate, its fundus toothed or tuberculate . .	13.
5.	Margins of the declivity with one or more large spines or truncate teeth	6.
	Margins of the declivity with small pointed tubercles alone	11.
6.	Species larger: black, piceous, or in part deep ferruginous	7.
	Species smaller: testaceous, with the front of the prothorax and the sides and apex of the elytra clouded	10.
7.	Margins of the declivity each with five teeth, the first three small, the lower pair large and conjoined	*validum*, Ferr.*
	Margins of the declivity with less than five teeth each	8.
8.	Margins of the declivity each with three teeth, the first very small . .	*tomicoides*, sp. n.
	Margins each with two teeth	9.
9.	First marginal tooth a small tubercle remote from the suture . . .	*præruptum*, sp. n.
	First marginal tooth large, approximate to the suture	*melanura*, sp. n.
10.	Margins of the declivity each with two small tubercles succeeded by a pointed spine	*bispinum*, sp. n.
	Margins each with a pointed spine succeeded by a rectangular tooth .	*lobatum*, Ferr.
11.	Species black or piceous; the elytra indistinctly lighter at the extremities	12.
	Species more or less testaceous; the front of the prothorax and sides and apex of the elytra infuscate or blackish	*laterale*, Eichh.
12.	Prothorax with a distinct transverse discal elevation; side-margins of the elytral declivity ridged before the first tubercle	*hoegei*, sp. n.
	Prothorax with no distinct discal elevation; side-margins of the declivity rounded and not definitely ridged before the first tubercle.	*luctuosum*, sp. n.
13.	Declivity obcordate, glabrous, with a large blunt tooth on each side near the apex	*bidens*, sp. n.
	Declivity subcircular, pilose, tuberculate	14.
14.	Elytra rather strongly punctured; margins of the declivity toothed above near the suture	*terminatum*, sp. n.
	Elytra subimpunctate; margins of the declivity unarmed	*egenum*, sp. n.
15.	Prothorax piceous, margined laterally; elytra distinctly punctured . .	*glabrifrons*, sp. n.
	Prothorax with apex at most infuscate, not margined laterally; elytra feebly punctured	*mali*, Fitch.
16.	Head simple in front, not fringed	17.
	Head with frontal fringes or brushes, excavate in front or deeply impressed near each eye. (COSMOCORYNUS, Ferr.)	24.

* The antennæ of the type being missing, the species is included in this part of the table on the evidence of other points of structure.

17.	Prothorax unicolorous, or gradually lighter towards the extremities .	18.
	Prothorax black, with a transverse testaceous vitta	*vittatum*, sp. n.
18.	Form rather robust; tubercles on the elytral declivity not approximate to the suture	19.
	Form slender, elongate; tubercles on the declivity approximate to the suture	23.
19.	Forehead shining, strongly punctured	20.
	Forehead subopaque, rather finely punctured	22.
20.	Declivity evidently punctured, finely tuberculate along the sutural margins, its lateral margins defined and not thickened	*umbrinum*, sp. n.
	Declivity subimpunctate, its sutural margins simple, its lateral margins broadly thickened	21.
21.	Forehead with a median elevated line and no broad impunctate area .	*difficile*, sp. n.
	Forehead with a median non-elevated impunctate space, laterally with coarse close punctuation	*punctifrons*, sp. n.
22.	Forehead uniformly opaque and finely punctured	*consimile*, sp. n.
	Forehead more shining in the middle, the punctuation deeper and closer over the angles of the mouth	*glabrifrons*, sp. n.
23.	Prothorax laterally margined; elytra not narrowed apically	*cordatum*, sp. n.
	Prothorax not laterally margined; elytra narrowed apically	*mali*, Fitch.
24.	Antennal club obovate	25.
	Antennal club broad-triangular, transverse	*fimbriaticorne*, sp. n.
25.	Forehead with a projecting horn over the mouth; elytra not sulcate along the suture	*lobatum*, Ferr.
	Forehead with no projecting horn; elytra with a common sulcus almost from the base of the suture	*ferrarii*, sp. n.

Division I.*

Front in the female simple, without excavations, foveæ, or fasciculi of curled hairs (*Pterocyclon*, s. str.).

1. Pterocyclon validum.

Corthylus validus, Ferr. Borkenk. p. 55 [1] (♂ nec ♀), p. 61, note 2 [2].

Subelongatum, sat nitidum, parcissime pilosum, nigro-piceum, prothoracis lateribus, ventre et pedibus ferrugineo-testaceis, hic illic infuscatis; fronte crebre punctata, medio tuberculata; prothorace oblongo, post medium sat evidenter punctato; elytris vix perspicue lineato-punctatis, declivitate oblique excavata, obcordata, nitida, ambitu in utroque elytro elevato sparsim piloso, 5-dentato, dentibus 1°, 2°, 3° minutis, acutis, magnitudine gradatim crescentibus, 4° magno, oblique truncato, 5° magno, clavato.

Long. 4·8 millim.

Somewhat elongate, moderately shining. Head rufescent, the mouth blackish; front convex, closely punctured, with a median impunctate line ending above the epistoma in an acute tubercle; eyes small, flat. Prothorax oblong, strongly and elliptically rounded in front, the sides not quite straight behind the middle; the hind angles obtuse, the base slightly curved, with an intra-marginal impression along each

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* The male forms of which the female has not been identified are referred to one or other of the two divisions of this genus by comparison with allied species of analogous structure.

side; disc blackish-pitchy, ferruginous-yellow at the sides, declivous and convex before the middle and asperate, behind cylindrico-convex, moderately shining and distinctly though not strongly punctured. Scutellum rather large, rounded-triangular, subrugose. Elytra scarcely as wide as the prothorax, and about one-third longer, subtruncate at base, nearly parallel-sided to the middle, thence slightly narrowed, the apical borders separately rounded externally and rather narrowly emarginate; surface deep piceous, a little lighter at the shoulders, cylindrical before the declivity, glabrous and rather shining, very finely punctured in rows and subrugulose; declivity obliquely excavate, beginning almost at the middle, obcordate, its fundus flat, shining, with a few scattered points and piliferous tubercles, its margins well-defined throughout, bearing on each side three small pointed tubercles at the upper part, a broad obliquely truncate tooth about the middle, and a longer clubbed tooth below. Underside ferrugino-testaceous; extremity of the abdomen black. Legs testaceous, the knees darker; anterior tibiæ with strong blunt serrations.

Hab. Mexico [2] (*Mus. Vind. Cæs.*).

The only specimen that I have seen is the type described by Ferrari [1]. In his description he associates as sexes two distinct forms—one from Mexico (his ♂), the other from Venezuela (his ♀). The latter (*Bostrichus quadrituberculatus*, Moritz, *in litt.*) belongs to the group of species in which the elytral declivity is impressed along the suture, convex and bituberculate, but not margined on either side; it has no fringe to the antennal club. The difference between the two forms in the structure of the elytra is not sexual, for it is in kind and not in degree. Ferrari's name being retained for the Mexican form, that from Venezuela may be conveniently known as *Pterocyclon quadrituberculatum*, nom. n. [=*Corthylus validus* (♀ nec ♂), Ferr.].

The type-specimen of *P. validum* has lost the club of both antennæ, and I cannot refer it to either sex; it bears no locality-label, but in Ferrari's work (p. 61, note 2) this particular example is stated to be Mexican.

2. **Pterocyclon melanura,** sp. n. (Tab. VIII. figg. 13, ♂; 13*a*, apex of elytra, ♂.)

Mas. Cylindricus, elongatus, nitidus, ferrugineus, fronte, prothoracis macula subapicali et elytris post medium nigricantibus, antennis pedibusque infuscatis; prothorace oblongo postice lævi; elytris indistincte lineato-punctatis, ad apicem oblique excavatis, ambitu acuto in utroque elytro bispinato infra marginato. Long. 4·2 millim.

Male. Cylindric, elongate, shining. Forehead subconvex, blackish, dull, subimpunctate, the mouth thinly fringed; antennæ piceous-brown, the club broad-oval, with nearly transverse sutures, the second sinuate. Prothorax fully one-third longer than broad, parallel-sided, circularly rounded at apex, the base subtruncate with rather obtusely-rounded hind angles; surface without discal elevation, ferruginous, the anterior third gradually declivous and convex, with an infuscate median patch, and asperate with rather weak transverse imbricate elevations, the posterior part smooth, with scattered microscopic punctures. Scutellum small, rounded. Elytra one-fourth longer than the prothorax and scarcely so wide at the base, parallel-sided, with rounded humeral angles; surface cylindric, ferruginous, gradually becoming black towards the apex, with irregular rows of microscopic punctures; apex obliquely truncate, excavate, obcordate, the margins divergent above, and armed on each side with an acute conical spine near the suture, below which the margin is produced obliquely in a curve to form the upper border of a longer horizontal incurved tooth, below which the margin becomes nearly vertical, strongly elevated, and inflexed beyond the apex of the suture in a rounded angle, forming with its fellow a triangular emargination; fundus of the excavation concave on each side, subconvex longitudinally along the suture. Underside and legs pitchy-brown; anterior tibiæ rather strongly spinous.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One example. In the formation of the elytra, this species resembles *P. validum* and *P. præruptum*.

3. **Pterocyclon præruptum,** sp. n. (Tab. VIII. fig. 14, ♂, apex of elytra.)

Mas. Subelongatus, subnitidus, parce breviter pilosus, piceus, antennis pedibusque ferrugineo-testaceis; prothorace latitudine sublongiore, apice fortiter rotundato, posterius subtiliter punctulato; elytris indistincte punctatis, ad suturæ apicem emarginatis; declivitate oblique excavata, obcordata, punctata, lateribus elevatis utrinque spinula parva et dente trapezoidali armatis.

Long. 4·3 millim.

Male. Cylindrical, somewhat elongate, moderately shining, with short scanty hairs, piceous, the base of the elytra somewhat lighter, the antennæ and legs ferruginous-testaceous. Forehead subconvex, dull towards the mouth, glabrous, strongly punctate, with a median subelevated smooth line, more marked on the epistoma; antennal club rather large, ovate, its sutures scarcely curved. Prothorax a little longer than broad, in front strongly rounded, the sides subparallel from the middle to the truncate base, the hind angles obtuse; disc convex and declivous for the anterior third, with rather small imbricate asperities and scattered hairs, the posterior part moderately shining, finely punctured, with an indistinct median impunctate line. Scutellum small, rounded-triangular, shining. Elytra scarcely so wide as the prothorax and about one-half longer, truncate at base, with subrectangular humeral angles, the sides slightly curved and narrowed posteriorly, the apical margins emarginate in the middle for a third of the width, the emargination as deep as wide; surface cylindrico-convex, flatter along the suture, indistinctly lineato-punctate and finely wrinkled, the interstitial spaces minutely punctured; declivity obliquely retuse, obcordate, and longer than broad, rounded above at the junction with the anterior part of the elytra, armed on either side above with a small pointed tubercle rather remote from the suture and succeeded by a strongly raised lateral margin which is produced in the middle into a short horizontal tooth, obliquely truncate at the tip, with an acute lower angle separated by a sharp notch from the lower part of the side-margin, which is scantily setose; fundus of the declivity concave, laterally punctured. Underside piceous, pubescent; anterior tibiæ strongly serrate.

Hab. GUATEMALA, Totonicapam 7000 to 8000 feet (*Champion*).

One example. A large species, with but one small tubercle above the large truncate tooth on each side of the elytral excavation.

4. **Pterocyclon tomicoides,** sp. n. (Tab. VIII. figg. 15, ♂; 15*a*, apex of elytra, ♂.)

Mas. Oblongus, cylindricus, sat nitidus, niger, antennis ferrugineis, tibiis et tarsis rufescentibus; prothorace oblongo, ad apicem fortiter rotundato, dorso post medium distincte punctato, linea media lævi; elytris subrugulosis, tenuiter lineato-punctatis, pone medium fere ut in *Tomico* quodam excavatis, fundo concavo, punctato, ambitu obcordato, subacuto, infra late emarginato, lateraliter ciliato et utrinque tridentato, dento 1° minuto prope suturam, 2° majore acuto, 3° sat remoto, quadrato.

Long. 3·4 millim.

Male. Oblong, cylindrical, somewhat robust and not elongate, moderately shining, black. Front of the head moderately convex, strongly punctured, sparsely towards the middle, glabrous, slightly shining above, opaque over the mouth, which is fringed; antennæ ferruginous, the club regularly oval, with curved sutures. Prothorax longer than broad, strongly rounded in front from the middle to the apex, the sides nearly parallel behind, the hind angles obliquely rounded, the basal border transverse; surface convex and declivous before the middle, cylindrical behind, with an indistinct transverse elevated line at the junction, its anterior portion not strongly asperate, with a few fine hairs, the posterior portion moderately

shining, with rather fine but distinct punctuation, absent over the median line and two lateral spots closer along the basal margin, which is impressed on each side. Scutellum small, rounded. Elytra as wide as the prothorax and less than one-fourth longer, transverse at base, the shoulders oblique, not callose, the sides subparallel, scarcely narrowed behind, the apical margins rounded as far as the middle of each elytron, then excised in a broad emargination; surface cylindrico-convex, flattened along the suture, which is impressed before the declivity, finely lineato-punctate, the interspaces covered with transverse wrinkles; declivity oblique, beginning behind the middle, broadly concave from side to side, shining and punctured, the side-margins elevated, ciliate with a few bristles, and furnished on each side with three teeth—the first a very small pointed tubercle close to the flexure of the suture, succeeded closely by an acute and rather long spine, the third remote from the second, backwardly directed, flattened, and truncate. Underside black; legs and coxæ pitchy-red, the femora darker; anterior tibiæ strongly serrate.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Three examples, all of the same sex. This species is separable from *P. melanura* and *P. præruptum* by its shorter and relatively stouter build, and by the presence of two strong teeth on each side-margin of the elytral excavation, together with a small pointed tubercle above them.

5. **Pterocyclon hoegei**, sp. n.

Mas. Oblongus, cylindricus, sat nitidus, nigro-piceus, elytris dilutioribus, antennis et pedibus testaceis; prothorace anterius a medio usque ad apicem rotundato; elytris punctatis, haud rugulosis, declivitate obliqua, anterius producta, subexcavata, marginibus vix acute elevatis in singulo elytro bituberculatis. Long. 3·1 millim.

Male. Oblong, cylindrical, rather shining, deep piceous, with the elytra lighter. Head concealed in the type; antennæ testaceous, the club rather long, obovate, with curved sutures. Prothorax oblong, strongly rounded from the middle to the apex, rather obliquely towards the sides, the latter parallel from the middle to the subrectangular hind angles, base subtruncate, finely margined towards the middle; disc convex, declivous, asperate before the middle, which is subelevated, with no distinct transverse line, its hinder half with very fine subasperate rugæ, closed along the base, sparser and more punctiform towards the narrow median impunctate line. Scutellum small, triangular, shining, black. Elytra as wide as the prothorax, and only one-fourth longer, subtruncate at base, the shoulders obtuse, the sides feebly curved throughout, little narrowed posteriorly, apex subtruncate (from above), the median emargination narrow and shallow; surface cylindrico-convex, shining, finely punctured, and transversely rugulose; declivity beginning gradually as an impression behind the middle of the suture, forming a shallow oblique cordate excavation behind, shining and punctured, the side-margins defined but scarcely acute and not thickened, each with two small acute teeth above and below the middle. Underside piceous. Legs reddish-testaceous, the anterior tibiæ with about six blunt spines on the upper margin.

Hab. MEXICO, Jalapa (*Höge*).

One specimen. This insect may be distinguished from the following species, *P. umbrinum*, by the prothorax being more strongly rounded in front as far back as the middle, by the fine subasperate rugæ of the hinder part of its surface, the shorter and more glossy elytra, with scantier punctures and rugæ, and the wider and more distinctly excavate declivity, the margins of which tend to become acute instead of forming the rounded callosities seen in *P. umbrinum* and its neighbours. The serration of the anterior tibiæ is also different from that seen in *P. umbrinum*, which has the

teeth small and numerous. It is, perhaps, the male of one of the three following species, but the locality is different, and does not admit of its being associated with any of them.

6. **Pterocyclon umbrinum,** sp. n.

Fem. Oblonga, cylindrica, vix nitida, capite et prothorace nigro-piceis, elytris piceis posterius infuscatis, antennis pedibusque fusco-testaceis, earum clava late ovata, fimbriata; prothorace medio transverse subelevato, posterius obsolete punctato; elytris postice angustatis, ad apicem singulatim rotundatis, medio haud profunde marginatis, supra subtilissime reticulatis et confuse punctatis, declivitate obliqua, ad suturam impressa, punctata, ad latera callose elevata, immarginata, callo singulo bituberculato, sparsim setoso, suturæ marginibus elevatis, subtiliter tuberculatis.

Long. 3·2 millim.

Female. Oblong, cylindrical, somewhat robust, scarcely shining. Head pitchy-black, subconvex in front, shining glabrous, strongly and closely punctured near the mouth and sides, the punctures weaker towards the median impunctate line; epistoma dull, transversely subimpressed; mouth scarcely fringed; eyes narrow, deeply emarginate; antennæ testaceous-brown, the club broad oval, subtruncate at the tip, with a fringe of long setæ arising from the inner face and upper border of the basal joint, its sutures curved. Prothorax rather longer than broad, circularly rounded in part to before the middle, thence parallel-sided to the slightly bisinuate base, the hind angles obliquely rounded; surface piceous-black, with a median transverse subelevated line, obliquely declivous, in front asperate and very sparingly pubescent, its hinder half rather dull, very obsoletely punctate. Scutellum small, transverse, rounded triangular, black. Elytra narrower at base than the prothorax, and rather less than one-half longer, their basal borders slightly rounded, the shoulders obtuse, the sides parallel to the middle, thence narrowed in an oblique curve, the apices strongly rounded (when seen from behind), with a rather shallow median emargination; surface subcylindric, but slightly shining, pitchy-brown, lighter towards the base, with fine close reticulation, minutely punctured in the interspaces, without distinct rows; declivity convex longitudinally, impressed along the suture, rather widely below, the impression prolonged vaguely above, distinctly and closely punctured, the sutural margins subelevated and finely tuberculate, sides not margined but callose, the callosities rather wide, bearing each two small tubercular teeth, of which the upper tooth is situate near the suture, and a few setæ on their outer part. Underside fuscous. Legs testaceous-brown; marginal serration of the anterior tibiæ fine and very close.

Hab. GUATEMALA, Purula in Vera Paz (*Champion*).

One specimen. The difference in the tibial structure justifies the separation of this form from *P. hoegei*, at least for the present.

7. **Pterocyclon consimile,** sp. n.

Fem. P. umbrino ♀ colore, statura approximata, sed robustior; fronte rufescente, minus nitida, subtiliter subæqualiter punctata, elytris ad latera per totum subrotundatis, vix perspicue sculpturatis, utrinque juxta suturæ basim impressis, declivitate minus obliqua, minus impressa, vix punctata, suturæ marginibus haud tuberculatis, cautissime distinguenda.

Long. 3·1 millim.

Female. Closely allied to *P. umbrinum*, but rather more robust. Head rufescent in front, rather dull, with fine uniform punctuation, median line not shining, slightly elevated; antennal club triangular, with the apex nearly truncate, its lower angle not rounded, fringe thin, arising from the basal joint only. Prothorax a little more obtuse, rather broader, its disc not quite so black, with the transverse line less distinct and farther from the apex. Elytra with the sides distinctly though slightly rounded from the base, their apices less strongly rounded, appearing subtruncat- from above; surface with similar

but weaker sculpture, appearing smoother, with a short impressed punctured striga on either side of the base of the suture; apical declivity less oblique, the impressed portion shallower, narrower, scarcely visibly punctured, the elevated sutural borders without a trace of tuberculation, the callose sides less elevated, with similar tubercles, and fewer and shorter hairs. Anterior tibiæ broader and more distinctly spinose. Underside rufescent.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

There seems no reason for doubting that this species, represented by one example, though very like *P. umbrinum*, is distinct from it, as the difference in the localities suggests. The same probability cannot be assumed in the case of the following species, which is closely allied to both the preceding, particularly *P. consimile*.

8. **Pterocyclon difficile,** sp. n.

Fem. Statura, magnitudine, sculptura *P. consimili* ♀ simillima; differt colore, fronte nitida ad latera crebre grosse punctata, antennarum clava ovali, margine superiore usque ad apicem densius fimbriato, elytris proportione brevioribus, posterius minus angustatis, tuberculis in ambitu declivitatis a sutura æque remotis.

Long. 3 millim.

Female. Allied to the two preceding species, particularly *P. consimile*. Entirely piceous-black, with the legs and antennæ testaceous-brown. Head very shining in front, strongly and closely punctured, the punctures deep and confluent near the eyes, the median line shining, subcarinate; antennal club ovate, not truncate, with a well-marked fringe along its entire upper border. Prothorax if anything a little broader, especially towards the base, and more strongly rounded at the apex, not otherwise different. Elytra only one-fourth longer than the prothorax, with the sides straight and not or scarcely narrowed behind, the apical margins more obtuse than in the two preceding species, appearing subtruncate when seen from above; surface sculptured as in *P. consimile*, with the strigæ at the base of the suture rather shallower; declivity broader, subvertical, less produced forward above, the impression along the suture broader, quite impunctate, the spines of the lateral callosities equidistant from the suture. Underside fuscous-black, the abdomen rufescent.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One specimen. The differences in the structure of the antennal club and in the frontal sculpture between this and the preceding form compel their reference to distinct species, in spite of their common origin, unless they should prove to be sexes of the same. This is unlikely, and if it be the case it will involve the rejection of the ciliate antennal club as a constant sexual character, one which appears to be valid as far as it has been at present tested.

9. **Pterocyclon luctuosum,** sp. n.

Mas. Oblongus, subnitidus, piceo-niger, elytrorum apice subrufescente, antennis et pedibus ferrugineo-testaceis; prothorace antice elliptice rotundato, posterius cum elytris subtilissime punctulato; his ad apicem obtuse singulatim rotundatis, declivitate subexcavata, breviter obcordata, ambitu lateraliter subacuto, utrinque bituberculato.

Long. 2·3 millim.

Male. Oblong, subcylindrical, scarcely elongate, rather shining, black, the elytra slightly rufescent towards the apex. Forehead subconvex, with rather close strong punctuation, moderately shining, duller and subimpressed over the mouth, the latter fringed with a few hairs; antennæ testaceous-brown, the

club rather small, oval, with curved sutures. Prothorax oblong, elliptically rounded in front to behind the middle, the sides behind nearly straight, the hind angles obtuse, not rounded, the base subtruncate; surface declivous and asperate for the anterior third, with no definite discal elevation, the posterior part moderately shining, finely reticulate, and sparsely punctate. Scutellum rounded, rather small. Elytra narrower at base than the prothorax and about one-fourth longer, truncate at the base, the shoulders obliquely rounded, the sides slightly curved throughout, subampliated towards the middle, and narrowed behind; apical margins obtusely rounded, the median emargination shallow; surface cylindrico-convex, shining, with rows of minute punctures; declivity subvertical, subexcavate but shallow, longitudinally curved above and slightly produced along the suture in front, shining, punctured, the lateral margins gibbous and subacute below, with two small tubercles on each side, the upper tubercle nearer the suture and situated on the margin, the lower just within it. Underside piceous; legs ferruginous-yellow, infuscate in part; anterior tibiæ with strong marginal serration.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

One specimen. Similar to *P. hoegei*, but about half the size, with the prothorax devoid of a definite discal elevated line; the punctuation of the elytra is finer and hardly perceptible with a lens, the side-margin of the apical excavation is rounded before the first tubercle, whereas in *P. hoegei* it is elevated to form a distinct ridge continuous with the upper edge of the tubercle; the punctuation of the fundus is much sparser in *P. luctuosum*. The type shows a little ferruginous spot at the base of each elytron, close to the scutellum, which is probably not a constant character.

10. **Pterocyclon bidens,** sp. n. (Tab. VIII. fig. 16, ♂, apex of elytra.)

Mas. Oblongus, cylindricus, subnitidus, fuscus, prothoracis apice et elytrorum dimidia parte basali dilutioribus; antennis pedibusque testaceis; prothoracis margine apicali tuberculato, disco postice subopaco, obsolete punctato; elytris parallelis, subimpunctatis, ad apicem oblique retusis, marginibus sat distinctis, retusione obcordata, ad suturam impressa, lateraliter in utroque elytro tumida et dente valido ad apicem emarginato instructa.

Long. 2·8 millim.

Male. Oblong, cylindrical, slightly shining, subglabrous. Head rather flat in front, glabrous, rather strongly punctured laterally, with a scarcely elevated median reticulated line; antennæ brown-testaceous, the sutures of the club slightly curved. Prothorax almost one-fourth longer than broad, its apical margin strongly rounded and regularly tuberculate, the sides subparallel, the hind angles obtuse, the base truncate; disc somewhat opaque, fuscous, with an ill-defined darker patch over the anterior third, the apex and base paler, the anterior third declivous and convex, without any median elevation, asperate, the posterior part with scattered microscopic punctures. Scutellum obtuse-triangular, rounded at apex, black. Elytra one-third longer than the prothorax, truncate at base, with rounded-rectangular humeral angles, the sides feebly curved and slightly narrowed behind, the apical margins separately rounded, and excised to form a broad shallow emargination; surface slightly curved longitudinally, glabrous, subimpunctate, posteriorly obliquely retuse, obcordate, the margins thickened above, becoming well-defined and subacute at the sides and below, and with a few minute setiferous tubercles, surface of the retuse area impressed along the suture, on each side tumid and armed with a strong vertically-compressed tooth directed backwards and inwards and notched at the tip. Underside fuscous, the abdomen lighter; legs testaceous.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One example. This species is well distinguished by the single tooth situate within the margin on each side of the elytral declivity, and recalling in form the armature met with in some species of *Sinoxylon* among the Bostrychidæ.

11. **Pterocyclon glabrifrons,** sp. n.

Cylindricum, subnitidum, fusco-piceum, elytrorum basali dimidia parte plus minusve testacea; antennis et pedibus testaceis; fronte punctata, glabra; prothoracis apice obtuse rotundato, dorso medio indistincte elevato, postice subopaco obsolete punctato; elytris posterius angustatis, ad apicem singulatim rotundatis, medio emarginatis, distincte subconfuse punctatis, in declivitate ad suturam impressis, utrinque callosis et bituberculatis.

Long. 2·6–2·8 millim.

Mas. Fronte supra os opaca, haud impressa; clava antennali ovali, breviter pilosa.

Fem. Fronte æqualiter subopaca, supra os subimpressa; clava antennali latiore, pilorum fasciculo ornata.

Cylindrical, moderately elongate, not very shining. Head piceous-black, the front feebly convex, subopaque, glabrous, punctured; in the male more opaque over the mouth, not impressed, the median line obsolete; in the female not more opaque over the mouth but subimpressed on either side and with a short, longitudinal, subelevated, smooth line towards the vertex, oral fringe almost wanting; antennæ testaceous, the club oval, with nearly straight sutures, in the male shortly pilose, in the female slightly wider and furnished with a scanty fasciculus of hairs on the superior border, about half as long again as the club. Prothorax about one-fourth longer than broad, the sides subparallel from the base to before the middle, then slightly narrowed, the apex rounded in an obtuse curve, hind angles rounded, the base subsinuate; disc gently declivous in front with traces of a median transverse elevation, piceous, with the apex sometimes lighter, glabrous, the apical half asperate in front, the asperities obsolete before the middle, the basal half dull, finely shagreened and obsoletely punctured, subimpressed before the hind angles. Scutellum rounded-triangular, black. Elytra scarcely as wide as the prothorax, and about one-third longer, the basal margins suboblique, the shoulders obtusely rounded, the sides subparallel, the hinder third thence slightly narrowed to the apex; apical margins separately rounded and hence emarginate at the suture; surface lighter or darker fusco-piceous, blackish, the basal half (except the side-margins) more or less testaceous; surface cylindrico-convex, declivous from the hinder third, not very shining, finely reticulate, with close irregular punctuation here and there in rows; declivity rather widely but not deeply impressed along the suture, laterally subcallose and bituberculate on each side. Underside piceous; legs testaceous.

Hab. Guatemala, Quiché Mountains (*Champion*).

Two pairs. This species is allied to and may possibly be identical with *P. lævigatum*, Eichh., from Brazil, of which no specimen has been procurable for comparison. The points in which the description of the latter species does not tally chiefly concern the sexual characters: *P. lævigatum* exhibits differences in the structure of the elytral declivity in the two sexes, and is described as having the apical margin of the prothorax crenulate in one sex; neither of these features is observable in *P. glabrifrons*.

12. **Pterocyclon punctifrons,** sp. n.

Fem. Oblonga, subnitida, subglabra, fusco-testacea, elytris ad basim dilutioribus; *P. glabrifronti* ♀ affinis, differt fronte nitida, lateraliter fortiter punctata, supra os profunde impressa et medio carinata, elytris postice minus angustatis, lævioribus, indistinctius punctatis.

Long. 2·7 millim.

Female. Oblong, cylindrical, rather dull, dirty testaceous-brown (the type perhaps immature), the elytra lighter towards the base. Head piceous, the front subconvex, very shining, glabrous, strongly and deeply punctured at the sides, impunctate in the middle, deeply impressed over the mouth, the impression interrupted in the middle by a short vertical carina; mandibles with a small lobe at the tip, separated by two notches from the outer and inner borders respectively; antennæ as in *P. glabrifrons* ♀. Prothorax circularly rounded in front, its disc scarcely so convex as in that species and with no distinct

median elevated line, in other respects similar. Elytra generally similar, but somewhat more parallel-sided towards the apex, and with less evident punctuation; apical declivity entirely similar.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

The one example is so closely allied to *P. glabrifrons* that it cannot be safely distinguished except by the sculpture of the head, which is sufficient to separate it. The little lobe at the tip of the mandible is curious and suggests a deciduous piece, but it has not been ascertained to be anything of the kind, and no such structure has yet been described in this family.

13. **Pterocyclon mali.**

Tomicus mali, Fitch, Reports on the Noxious Insects of N. York, iii. p. 8, no. 5 [1].
Crypturgus mali, Zimm. Trans. Am. Ent. Soc. 1868, p. 143 [2].
Monarthrum mali, Lec. Rhynch. N. Am. p. 349 [3].
Pterocyclon mali, Eichh. Rat. Tom. p. 447 [4].
Pterocyclon longulum, Eichh. Berl. ent. Zeitschr. 1868, p. 278 [5].

Hab. NORTH AMERICA, Canada [2], New York State [1], Southern States [2], Lake Superior to Florida [3].—MEXICO [4].—ANTILLES, Cuba [4].

We have received no examples of this common North-American species from our region. It attacks apple-trees, and an account of its depredations is given by Schwarz [Proc. Ent. Soc. Wash. i. pp. 44, 48].

14. **Pterocyclon cordatum,** sp. n.

Fem. Elongata, cylindrica, subnitida, fusca, prothoracis tertia parte basali testacea; elytris flavo-testaceis, lateribus et apice infuscatis; antennarum clava subtriangulari, suturis curvatis, ciliata; elytris punctatis, ad apicem oblique subabrupte declivibus, retusione subcirculari lateraliter et infra marginata, præter suturam vix impressa, utrinque bituberculata.

Long. 2·5 millim.

Female. Elongate, cylindrical, moderately shining. Head blackish, subconvex in front, shining near the vertex and in the middle line, punctured and dull towards the sides, mouth fringed; antennæ testaceous, the club subtriangular, the apex somewhat obtuse, the sutures curved, fringed with long hairs arising from the superior border and from the inner face of the basal joint. Prothorax more than one-fourth longer than broad, subcircularly rounded in front, the sides parallel behind the anterior third, the base truncate, the hind angles obtuse; surface testaceous, gradually infuscate over the apical third, which is obliquely declivous and asperate, discal elevation absent, the posterior two-thirds minutely reticulate and obsoletely punctate. Scutellum rounded-triangular, fuscous. Elytra as wide as the prothorax and one-third longer, parallel-sided, truncate at base, with rounded-rectangular humeral angles, the apical margins seen from behind separately and strongly rounded and divaricate in the middle to form an obtuse sutural emargination; surface cylindrical, obliquely and rather abruptly declivous behind, obscure testaceous-yellow, infuscate at the sides and apex, and finely but perceptibly lineato-punctate; declivity subretuse, flattened, nearly circular, except for the inferior emargination, rounded above at the junction with the horizontal portion of the elytra, margined at the sides and apex but not acutely, opaque, shortly pilose, with two small tubercles on each side rather near the suture. Underside fuscous. Legs testaceous.

Hab. GUATEMALA, Quiché Mountains (*Champion*).

One example. Allied to *P. mali*; slightly more robust, with less distinct elytral punctuation and flatter declivity, the tubercles thereon minute and not situate on any elevation of the surface.

15. **Pterocyclon terminatum,** sp. n. (Tab. VIII. fig. 17, ♂, apex of elytra.)

Mas. Elongatus, cylindricus, sat nitidus, nigro-piceus, prothoracis basi et elytris (apice excepto) sordide flavo-testaceis; elytris distincte lineato-punctatis, ad apicem oblique retusis, ambitu marginato, supra prope suturam utrinque bidentato, dente secundo majore, retusione pallide pilosa, utrinque callose elevata, callo utroque supra tuberculato, infra incurvato.

Long. 3 millim.

Male. Elongate, cylindric, somewhat shining. Head fuscous (retracted in the type); antennæ brown-testaceous, sutures of the club oval. Prothorax oblong, its apical margin somewhat obtusely rounded and subcrenate, the sides parallel from before the middle to the base, which is truncate, with a transverse impressed line along its margin; surface with no discal elevation, glabrous, dull yellow-testaceous, the anterior third blackish, terminating behind in a well-defined curve, convex and finely asperate, the remainder closely reticulate, finely and sparsely punctate except over a median longitndinal subinfuscate line. Scutellum rounded-triangular, blackish. Elytra nearly one-half longer than the prothorax, scarcely so wide, truncate at base, with rounded-rectangular humeral angles, parallel-sided, not narrowed behind, the apical margins nearly transverse when seen from above; surface cylindrical, somewhat flattened along the suture, obliquely declivous and retuse at apex, dull testaceous-yellow, darker along the suture, the sides and apical third pitchy-black, distinctly lineato-punctate, the sutural row a little stronger: declivity beginning at the posterior fourth, subcircular, with well-defined margins, commencing above with two teeth near the suture, the upper tooth small, the lower larger, pointed, apical emargination shallow and inconspicuous; its surface pilose with rather long hairs, impressed slightly along the upper part of the suture and elevated on each side into a callosity, stronger and furnished with a small tubercle at its upper part, becoming inconspicuous below and incurved towards its fellow. Underside piceous; legs brown-testaceous.

Hab. GUATEMALA, Capetillo (*Champion*).

One specimen. An insect somewhat similar in general appearance to *P. cordatum*, but larger, with the elytra distinctly punctate and the declivity differently formed.

16. **Pterocyclon egenum,** sp. n.

Cylindricum, subnitidum, sordide pallide testaceum, prothoracis antica parte et elytrorum apice nigricantibus; antennarum clava latius ovata, subacuminata; elytris ad apicem subtruncatis, declivitate fere verticali, circulari, superne prope suturam utrinque tumida et subtuberculata.

Long. 1·8 millim.

Oblong, cylindrical, scarcely shining. Head fusco-piceous, the front subconvex, dull and glabrous; antennæ testaceous, the club rather broad, oblique oval, the lower margin convex to the middle, then slightly excised, the apex hence subacuminate, the sutures curved, oblique. Prothorax more than one-third longer than broad, strongly rounded at the apex, parallel-sided from before the middle to the subsinuate base, hind angles subrectangular; surface fuscous-black anteriorly, the black area ill-defined behind and extending back to a variable distance behind the middle, posteriorly pale dirty testaceous, its anterior third declivous, finely asperate, behind rather dull, imperceptibly punctured, a little more shining along the median line and with a feeble trace of a transverse elevation before the middle. Scutellum somewhat acute, triangular, black. Elytra as wide as the prothorax and scarcely longer, feebly rounded at base, the shoulders rounded, the sides nearly parallel, not narrowed behind, the apex truncate when seen from above; surface cylindrical, dirty testaceous with the declivity blackish, slightly shining and feebly punctured; declivity subvertical, broader than long, the side-margins defined but not acute, the apical

margins separately rounded when seen from behind and narrowly emarginate at the suture, its surface subconvex, moderately shining, and shortly pilose, with an elevation at its upper part on either side of the suture bearing one or two inconspicuous tubercles.

Hab. GUATEMALA, San Juan in Vera Paz (*Champion*).

One specimen. I have four or five others from tobacco-refuse, among which I can detect no sexual differences. This species is about the size of *P. pumilio*, Eichh., but differs from that insect, as described, in having the elytral tubercles situated within and not on the margins of the declivity. In the shape of the antennal club it somewhat approaches *Brachyspartus*.

17. **Pterocyclon laterale.** (Tab. VIII. fig. 18, apex of elytra.)

Pterocyclon laterale, Eichh. Berl. ent. Zeitschr. 1868, p. 278[1]; Rat. Tom. p. 439[2].

Hab. MEXICO [1], Toxpam (*Sallé*).

I identify as this species two examples, apparently males, obtained by M. Sallé. They are a little darker in colour than Eichhoff's description implies, and have the suture, as well as the side-margins and apex, of the elytra infuscate. Both are probably rather more mature than the type, which has not been accessible for examination.

18. **Pterocyclon bispinum,** sp. n. (Tab. VIII. fig. 19, ♂, apex of elytra.)

Mas. Cylindricus, sat nitidus, testaceus, subtus pallidior, plaga in prothoracis disco magna posterius producta, elytrorum lateribus et apice subinfuscatis; fronte opaca; elytris obsolete lineato-punctatis, ad apicem excavatis, excavatione concava, cordata, ambitu acute marginato, utrinque 3-dentato, dentibus 1 et 2 prope suturam parvis, 3° ante medium magno.

Long. 3 millim.

Male. Oblong, cylindrical, somewhat shining, testaceous-brown, with a discal patch on the prothorax and the sides and apex of the elytra somewhat infuscate. Front of the head subconvex, opaque, scarcely punctured, mouth not fringed; antennæ testaceous-brown, the club oval, with curved sutures. Prothorax one-fourth longer than broad, its apical margin strongly rounded and subcrenate, the sides subparallel from behind the middle, hind angles somewhat obtuse, the base truncate; disc with no median elevation, its anterior third part declivous and finely asperate, the remainder moderately shining, impunctate. Scutellum transverse, with rounded margins, infuscate. Elytra scarcely as wide as the prothorax and less than one-third longer, truncate at the base, the humeral angles rounded, the sides slightly curved throughout and convergent behind the middle, the apical margins separately and strongly rounded, with an obtusely-angled wide median emargination, not angulate externally; surface slightly convex from base to apex, flattened round the scutellum and with a few distinct punctures, otherwise punctured very obsoletely in rows, the suture slightly impressed before the declivity, which is oblique, broadly excavate and entirely concave, shining and punctured, its margins sharply elevated, cordate in outline, with three teeth on each side, the first two small pointed tubercles close to the suture above, the third just before the middle, rather long, pointed, and slightly incurved at the tip; pubescence consisting of a few hairs on and outside the margin of the declivity. Underside and legs lighter testaceous.

Hab. PANAMA, Bugaba (*Champion*).

The single specimen received is allied in general aspect to *P. laterale*, or rather to the insect here identified with that species; but in the latter the armature of the

declivity consists of three small pointed tubercles placed at almost equal distances on each side-margin.

19. **Pterocyclon vittatum,** sp. n. (Tab. VIII. figg. 20, ♀; 20 *a*, apex of elytra, ♀.)

Fem. Cylindrica, subnitida, fusco-nigra, prothorace vitta transversa, elytris plaga humerali testacea ornatis; antennis pedibusque testaceis, illarum clava ovali, in pagina interna dense fusco-ciliata; elytris subtilissime punctulatis, apice medio emarginatis, declivitate convexa, præter suturam sulcata, in utroque latere callose elevata, bituberculata.

Long. 2·7 millim.

Female. Moderately elongate, cylindrical, slightly shining. Head black, subconvex in front, somewhat shining, with close substrigose punctuation, the epistoma margined, the mouth thinly ciliate; antennæ testaceous, the club oval, with curved sutures, its inner face concealed by a dense fringe of fuscous hairs arising from it and the upper margin. Prothorax a little longer than broad, rounded in front from before the middle, the sides nearly parallel behind, the base truncate, the hind angles subrectangular; surface gradually declivous in front, without a discal elevation, black at apex, fuscous-black at base, with an antemedian transverse testaceous-brown vitta curved backwards and widened at the sides, the apical third asperate, the remainder very finely shagreened. Scutellum rounded, black. Elytra narrower than the thorax and nearly one-half longer, subtruncate at base, the shoulders obliquely and broadly rounded, the sides very slightly curved and scarcely convergent behind, rounded at the junction with the apical margins, which are nearly transverse (when seen from above), with a shallow median emargination; surface cylindrico-convex, yellowish-testaceous, the sides, the greater part of the sutural margins and apex fuscous, becoming black apically, finely shagreened and hardly visibly punctate; apex strongly and curvedly declivous, bordered below, somewhat deeply impressed along the suture, and elevated on each side of the impression into a bituberculate callosity. Underside fuscous-black; the legs testaceous.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One example. The colour will distinguish this species from the two preceding, with which it shows some affinities. Neither of the latter has any trace of a dark base to the thorax, the presence of which in *P. vittatum* helps to define the characteristic median light vitta. The elytral declivity is differently formed, but it remains to be seen how far this may vary in the male.

Division II.

Front in the female excavate, or foveolate over the eyes, with an elevated median area surrounded with long fimbriate hairs. (Cosmocorynus, Ferr.)

To this division belong, besides the following described species, *Cosmocorynus cristatus*, Ferr., and perhaps *Trypocranus cincinnatus*, Eichh. *Corthylus bicolor*, Ferr. (♀), is an osculant form between the two divisions, having a deep fovea over each eye, an impression on each side of the epistoma, and a medial frontal elevation; it is, however, destitute of fimbriate hairs, which are present in all the other species.

The only male form which is certainly identified as belonging to this division, that of *P. lobatum* (Ferr.), presents no peculiar features whatever to distinguish it from those of Division I.

None of the North-American species referred by Leconte to the subgenus *Cosmocorynus* have any connection with it; they all belong to Division I.

20. **Pterocyclon lobatum.** (Tab. VIII. figg. 21, apex of elytra, ♂; 22, ♀; 22 *a*, head.)

Corthylus lobatus, Ferr. Borkenk. p. 57, ♂ ♀ (lege ♀ ♂) [1].
Corthylus signatus, Ferr. loc. cit. p. 56 (pars) [2].

Subcylindricum, testaceum, capite, prothoracis antica parte, elytrorum lateribus et apice fusco-piceis; elytris postice angustatis, oblique excavato-retusis, ambitu utrinque 3-dentato, dente superno acuto.
Long. 3·3 millim.
Mas. Fronte inermi; apice elytrorum profundius excavato, acutius marginato, dente 2° rectangulo.
Fem. Fronte excavata, cornu recurvo supra os armata; clava antennali lata, ciliata; apice elytrorum minus excavato, obtusius marginato, dente 2° obtuso.

Moderately elongate, subcylindrical, moderately shining. Head fusco-testaceous; the front (♂) convex, glabrous, shining, strongly punctured laterally, nearly smooth in the middle and subimpressed over the mouth; the front (♀) excavate to the eyes, the impression elevated in the middle and furnished with a dense brush of forwardly-directed hairs, and armed over the mouth with a curved horn, projecting forwards and slightly recurved and thickened at the tip; antennæ testaceous, the club with nearly transverse sutures, narrow (♂) and not fringed, broader (♀) and fringed on the upper border, the hairs neither long nor numerous. Prothorax longer than broad, obtusely rounded in front, the sides subparallel from the anterior third to the truncate base, the hind angles rounded, the apical margin (♂) with a dense villous fringe of curled hairs formed by the elongation and thickening of the usually inconspicuous intramarginal cilia; surface gradually declivous before the middle, fusco-testaceous, the apical third deeply infuscate and finely asperate, the posterior two-thirds dull, with minute sparse punctures. Scutellum triangular, testaceous, with black margins. Elytra scarcely as wide as the prothorax and about one-third longer, slightly oblique at the base, the sides very feebly curved, convergent behind the middle, inflexed behind in a rounded angle to the separately-rounded apical margins, which form a wide, shallow, sutural emargination; surface subcylindrical, obliquely excavate at the apex, with the suture impressed before the declivity, fusco-piceous, the basal half more or less testaceous, moderately shining, with indistinct rows of minute punctures; excavation (♂) rather deep, obcordate, shining, punctured, with the margins of the suture raised; side-margins acute, narrowly divaricate above at the suture, and armed with three teeth on each side, the first acute at the superior angle, separated by a notch from the second tooth, which is above the middle, and is subrectangular when seen from the side, the third tooth small and tuberculiform, separated by a shallow curve from the second; excavation (♀) shallower and less oblique, with the teeth shorter, the second obtuse when seen from the side, the lateral margin not acute below it. Underside and legs pallid testaceous.

Hab. Guatemala, Purula (*Champion*).—Venezuela (*Moritz, in Mus. Vind. Cæs.* [1 2]).

Three specimens. The structure of the head in the female shows a strong resemblance to that found in *P. cristatum* (Ferr.) and *P. ferrarii*, except that both these insects want the frontal horn; the fringe down the middle of the forehead is composed of a double vertical row of hairs curled outwards on each side, and is evidently homologous with the vertical rows which in those two species margin the shining median elevation, here obliterated. The development in the female of the intramarginal fringe of the front of the thorax is a novel sexual feature, so far as this family is concerned.

The nomenclature of this species amusingly illustrates the character of Ferrari's

work. He described under the name of *Corthylus lobatus* two examples which correspond with the specimens that we have received from Purula, though he not unnaturally reversed the sexual characters as here given. Under the name *Corthylus signatus*, Ferr., he grouped and purported to describe four specimens which actually belong to three different species. Two, mounted on the same card and labelled by him "♀, ♂," are respectively *Pterocyclon bicolor* (Ferr.) and *Pterocyclon lobatum* (Ferr.). The remaining pair, which by exclusion would be regarded as the types of *Corthylus signatus*, prove, however, to be examples of *P. chapuisi* (Kirsch), so that *Corthylus signatus*, although founded on the broad basis of three species, is dissolved into its elements and ceases to exist!

21. **Pterocyclon sulcatum,** sp. n.

Mas. Elongatus, parum nitidus, ferrugineo-testaceus, capite, plaga discoidali prothoracis apicem versus elytrorum sutura, lateribus, apice nigricantibus; elytris medio fere a suturæ basi sulco communi utrinque seriato-tuberculato impressis, apice oblique retuso, obcordato, lateraliter marginato, margine utroque bituberculato.

Long. 4 millim.

Male. Elongate, subcylindrical, not very shining. Head black (the front concealed in the type); antennæ testaceous, the club darker, oblong-oval, with curved sutures, not fringed. Prothorax oblong, its apical border obtusely rounded and crenate, the sides slightly rounded, the hind angles subrectangular, the base truncate; surface rounded from base to apex, more strongly in front, with no defined median elevation, ferruginous-testaceous, the apical half occupied by a large blackish patch not reaching the margins, scantily hairy and rather finely asperate, the asperities rapidly decreasing in size posteriorly, the basal half dull, obsoletely punctate. Scutellum small, rounded, black. Elytra scarcely so wide as the prothorax and one-half longer, subtruncate at base, with rounded humeral angles, the sides convergent from the middle to the apical flexure, where they are strongly incurved by a rounded angle, the apical margins being subtransverse externally and conjointly excised in a shallow, curved, median emargination; surface ferruginous-testaceous, the suture, lateral limb, and apex blackish, moderately shining, subrugulose and obsoletely punctate, sulcate along the suture from shortly behind the scutellum, the sulcus not deep, rugose, with a series of small tubercles on either side; declivity obliquely retuse, beginning at the apical fourth, obcordate, the lateral and inferior margins defined, thickened above and below the middle, the thickenings each crowned with a small, pointed, setiferous tubercle, the fundus opaque, obsoletely punctured, with the sutural margins subelevated. Underside fuscous, the abdomen and legs testaceous.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One example. The peculiar structure of the elytra in this species indicates an affinity with *P. ferrarii*, though, as the type of that insect is of the opposite sex, no comparison can be made with the characters exhibited by its head and antennæ. *P. sulcatum* is distinguished by its larger size and the distinctly retuse elytral apex, the side-margins of which are defined.

22. **Pterocyclon ferrarii,** sp. n. (Tab. VIII. fig. 23, ♀, head from in front.)

Fem. Oblonga, subnitida, fusco-testacea, capite, prothoracis dorso ad apicem, elytrorum lateribus fusco-nigris; fronte plaga longitudinali nitida, elevata, pilis longis prorsus directis insuper densioribus marginata;

antennarum clava ovali, longius ciliata; elytris subtiliter punctulatis, mox pone basim præter suturam impressis, declivitate convexiuscula, sat nitida, in singulo elytro subelevata, bituberculata.

Long. 2·7 millim.

Female. Oblong, not very elongate, moderately shining, nearly glabrous above. Head fuscous-black, deeply impressed on either side in front of each eye, and with an oblong glossy elevation extending from the mouth to the vertex, somewhat wider in the middle, and margined with coarse, forwardly-directed, yellow hairs, longer above but absent over the middle line, mouth thickly fringed; mandibles rufescent, powerful, notched on their inner border; eyes moderately large, deeply emarginate; antennæ testaceous, the funiculus two-jointed, the club oval, with obliquely-curved sutures, and with a fringe of long hairs arising chiefly from its superior border, its lower apical angle with a few shorter cilia. Prothorax more than one-fourth longer than broad, broadly rounded at the apex, the sides parallel from the anterior third to the base, the latter slightly rounded, the hind angles obtuse; surface very obliquely declivous in front, with a slight elevation rather behind than before the middle, anteriorly fuscous-black, the infuscate shade extending above to the hinder third, the sides and base dull testaceous, subglabrous and finely asperate before the elevation, behind rather dull and imperceptibly punctate. Scutellum transverse, obtusely triangular, fuscous-black. Elytra narrower than the prothorax and but little longer, separately rounded at base, with obliquely-rounded shoulders, the sides becoming a little widened behind the base, then subparallel to the hinder third, whence they are slightly incurved, apical margins obtusely rounded, with a shallow median emargination; surface cylindrico-convex, testaceous-brown, the sides and apex, but scarcely the suture, infuscate, moderately shining, and extremely finely punctured in rows; sulcate along the suture from the basal third to the apex, the sulcus shallow, narrower than in *P. sulcatum*, not rugose, its side-margins curved, obsoletely tuberculate, the sutural margins a little raised; apex strongly declivous, but convex and not retuse, callous and bituberculate on each side of the sutural sulcus, somewhat shining, and furnished with a few scattered hairs. Underside infuscate; legs testaceous.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One specimen. Allied to *Pterocyclon* (*Cosmocorynus*) *cristatum* (Ferr.), with which I identified it before seeing the type of that insect. The latter example is rather smaller, with the frontal elevation wider and shorter, and the prothorax less parallel-sided; its elytra are more narrowed behind; the sutural sulcus is better-marked, rougher, and fuscous-black; the apex is dull, more oblique, less evidently punctured; the tubercles are inconspicuous.

The last-mentioned specimen, the type of *Cosmocorynus*, has hitherto been examined by no one save Ferrari, and the genus was regarded by Eichhoff as a part of *Corthylus*. But in *P. cristatum* the funiculus is 2-jointed, and not single-jointed as described and figured by Ferrari. The relationship of this insect to *Corthylus* is therefore disproved, and, indeed, it does not resemble any species of that genus in appearance. The corneous processes on the head and the curved horn on the antennal club described by Ferrari are, as was to be expected, nothing more than collections of matted hairs.

23. **Pterocyclon fimbriaticorne,** sp. n. (Tab. VIII. fig. 24, ♀, antenna.)

Fem. Subelongata, subnitida, fusco-picea, prothoracis basi, lateribus, elytrorum antica dimidia parte (limbo laterali excepto) sordide flavo-testaceis; antennarum scapo valde dilatato, clava magna, transversa, triangulari, pilis longis ciliatis ex articulo basali et marginibus superiore et apicali orientibus ornata; fronte excavata, trifasciata; elytrorum declivitate oblique retusa, obcordata, utrinque bituberculata.

Long. 3 millim.

Female. Somewhat elongate, scarcely shining, almost glabrous. Head black, excavate in front, the excavation narrowed towards the vertex, the sides of which are convex and deeper over each eye, with three fasciæ of shining fulvous hairs, the lower fasciæ arising from the upper anterior border of the eye and curled upwards and inwards, the upper fascia arising from the vertex, longer, bipartite, and curled downwards and inwards; eyes small, flattened, deeply emarginate. Antennæ testaceous, the scape short, very strongly dilated and flattened, its superior border more strongly rounded, concave; funiculus 2-jointed, the apical joint very inconspicuous; club triangular, much broader than long, truncate at apex, subconcave internally, its upper border curved, its lower border longer, sinuate, the sutures transverse, sinuate, ciliate at the apex with long hairs arising from the apical margin, and with a dense fascicle of hairs springing from the inner face of the basal joint and the upper margin. Prothorax oblong, rather obtusely rounded at apex, the sides straight from before the middle to the base, the latter subtruncate, not margined, the hind angles obtuse; surface infuscate from the apex to the hinder third, more deeply in front, the base and sides testaceous, with no discal elevation, the anterior third obliquely declivous, finely asperate, the remainder subimpunctate. Scutellum small, rounded-triangular, black. Elytra narrower than the prothorax and one-third longer, subtruncate at base, the shoulders obtusely rounded, the sides straight at the base, incurved behind the middle; the apical angles obtusely rounded, the terminal emargination shallow; surface cylindrico-convex, dull testaceous-yellow to the middle, the sides and posterior half fuscous, becoming blackish apically, scarcely visibly punctured; declivity obliquely retuse, longitudinally impressed, its lateral margins somewhat thickened but scarcely acute, bituberculate. Underside testaceous, posteriorly infuscate. Legs testaceous, the anterior tibiæ slender, their posterior face finely asperate, the marginal serrations obsolete.

Hab. GUATEMALA, Purula in Vera Paz (*Champion*).

One specimen. The antennæ are unlike those of any other *Pterocyclon*, and resemble those of a female *Corthylus*, but are relatively smaller, with a two-jointed funiculus. The head is like that of *P. lobatum*, ♀, in structure, though without the horn, whereas the remainder of the body is that of a typical *Pterocyclon*. The mouth-parts have not been examined.

The genus *Trypocranus*, Eichh., was proposed for a species agreeing with *Pterocyclon* in all points, except in the form of the antennæ, head, and mouth-parts. The antennal club of *T. cincinnatus*, Eichh., is described as subquadrate, with an emarginate apex, but the author admits that he did not fully examine the antenna, as he was unwilling to relax his unique example. It is therefore difficult to see how he investigated the mouth-parts. He describes the maxillary palpi as long, subfiliform, and arising from the base of the maxillary lobes. This is very unlike the same structures in all other Tomicini. *Trypocranus* is probably identical with *Cosmocorynus*, and *T. cincinnatus* may find a near ally in the present species.

TRICOLUS, gen. nov.

Funiculus antennarum triarticulatus; clava haud magna, ovalis vel orbiculata. Prothorax a basi usque ad apicem subconvexus, anterius declivis. Elytra postice oblique excavata, ad apicem emarginata.

This genus is distinguished from *Pterocyclon* by a few characters only. The funiculus is three- (not two-) jointed, the club ovate or orbicular. The body is less elongate and cylindrical, the prothorax being subconvex from the base to the apex, and more or less declivous in front. The elytra and limbs show no material difference from those of a *Pterocyclon*.

The two species here referred to *Tricolus* are perhaps not closely related. At the same time they do not adapt themselves readily to any existing genus and must be provisionally separated, although, in the absence of adequate material, their generic characters have been but imperfectly studied.

1. **Tricolus ovicollis,** sp. n. (Tab. IX. figg. 3, ♂; 3 *a*, apex of elytra.)

Mas. Subcylindricus, subnitens, piceus, antennis et pedibus fuscis; prothorace anterius subconstricto, dorso a basi subæqualiter convexo; elytris postice subangustatis, subtiliter lineato-punctatis, ad apicem oblique excavatis, fundo fere plano, punctato, ambitu subacute elevato et in singulo elytro tridentato, dentibus 1°, 2° parvis, 3° majore, subacuto intus curvato.

Long. 3·2 millim.

Male. Subcylindrical, rather shining, deep pitchy, the antennæ and legs piceous-brown. Front subconvex, moderately shining, obsoletely punctured towards the sides, with a transverse cribriform patch over the thinly fringed mouth; funiculus distinctly 3-jointed, the club moderately large, oval, flat, shortly pilose, with curved sutures. Prothorax about as broad as long, somewhat constricted in front and rounded in a sharp ellipse to the middle of the sides, thence slightly curved to the truncate, immarginate base; surface gradually rounded from base to apex, its anterior third asperate, behind subopaque and obsoletely punctured, the basal limb with fine transverse subasperate wrinkles. Scutellum subtriangular, piceous. Elytra as wide as, and nearly one-half longer than, the prothorax, truncate at base, humeral angles oblique, sides feebly rounded, gradually convergent behind, apical angles broadly rounded, the apex bordered, with a narrow median emargination, its outer angles somewhat distinct; surface cylindrico-convex, finely punctured, its posterior third obliquely excavate, the excavation oblong, narrowed in front, nearly flat from side to side, with the suture narrowly margined, shining, punctured, glabrous, its side-margins elevated, each with three teeth, the first small, close to the suture, the second larger, acute, before the middle, the third median, longer and stouter, incurved and bluntly pointed, the margin acute behind the third tooth. Underside piceous; anterior border of the prosternum everted and prominent. Anterior tibiæ narrow, slightly curved, feebly spined, and scabrous externally; tarsi short.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

One specimen. Save for the shape of the prothorax, the appearance of this insect is altogether that of a *Pterocyclon*.

2. **Tricolus nodifer,** sp. n. (Tab. IX. fig. 4, apex of elytra.)

Sexus? Oblongus, subnitidus, subglaber, piceus, elytris dilutioribus; prothorace semielliptico, ad apicem fortiter convexe declivi, margine subreplicato, dorso rugulis transversis, antice fortius, postice subtilius scabrato; elytris distincte punctatis, ad apicem oblique excavatis, ambitu subcalloso, utrinque unidentato et ad apicem in nodum inflexum a sutura sat remotum producto.

Long. 3 millim.

Sex? Oblong, not cylindrical, nearly glabrous, piceous, the elytra ferruginous, with the sides and apex fusco-piceous. Head concealed in the type; antennæ ferruginous, the scape short, club broad-oval, subconcave internally, with curved sutures, pubescent and thinly fringed at the apex. Prothorax longer than broad, the sides subparallel from the base to the middle, thence elliptically rounded to the apex, margin of the latter somewhat reflexed in the middle, hind angles rectangular, base transverse, laterally subimpressed; surface a little lighter behind, convex from base to apex, more strongly in front, the anterior opening being nearly horizontal at its apex, anteriorly with rather coarse asperities, posteriorly with transverse subasperate rugæ, finer and closer towards the base, their interspaces reticulate. Scutellum triangular, shining, fuscous. Elytra scarcely as wide as the prothorax and less than a third longer, subtruncate at base, the shoulders rounded, sides slightly rounded throughout and convergent behind, outer apical angles

with an irregular knob-like process, bent inwards and separated from its fellow by an emargination more than twice as broad as deep; surface longitudinally convex, punctured in irregular rows, obliquely retuse and shallowly excavate for the hinder third, the excavation concave, shining, closely punctured, its margins forming a broad oval, and subacutely elevated, with a short pointed tooth above on each side of the suture, which is thickened about the middle and callous below before the apical nodosity. Underside fuscous; prosternum not prominent. Anterior tibiæ linear, straight, with close fine serration.

Hab. GUATEMALA, Mirandilla (*Champion*).

One example. A more robust insect than *T. ovicollis*, with less cylindrical elytra, and distinguishable by the somewhat distant knobbed processes at their apex.

AMPHICRANUS.

Amphicranus, Erichson, Wiegm. Arch. 1836, i. p. 63; Eichhoff, Rat. Tom. p. 462.
Piezorhopalus, Guérin, Rev. Zool. 1838, p. 107.

In this genus, which contains some of the most highly specialised forms among the Tomicini, the elytra are excavate behind, or at least retuse, and either explanate at the apex (*A. retusus*, *A. brevipennis*), or more commonly produced into two parallel gouge-like processes, separated by a narrow interval and concave on the inner face.

In the larger and more typical species the head is concealed, the prothorax being vertically declivous towards the anterior opening, which is often trisinuate; in the smaller forms the front of the prothorax is diverse in structure, being either vertically declivous (*A. hybridus*), obliquely declivous (*A. collaris*), produced beyond the head and rounded at the tip (*A. propugnatus*), or prolonged into an acute peak (*A. fastigatus*).

The antecoxal portion of the prosternum is variable: shorter in the larger species, it is very long in the smaller slender forms (*A. bipunctatus*, *A. filiformis*, &c.); its hind margin is quite transverse, so that the anterior coxæ appear to project from a common cotyloid cavity. Unfortunately the differences in its length are not easily to be employed for subdividing the genus. The funiculus is three-jointed; but in the types of *A. filiformis* and *A. hybridus* the third joint is not distinguishable. The club is oval, moderate or large; in the larger species it is closely pubescent, with some longer hairs on the inner face, and with the sutures strongly curved or angulate, at least on the outer face, so that the second joint is chevron-shaped; in the smaller species the sutures are subtransverse, or obtusely curved on both faces, and the surface is scantily hairy.

In *A. hybridus* the club is fringed with long hairs, as in a female *Pterocyclon*, and the species may be regarded as an osculant form between the two genera. It and *A. filiformis*, which also resembles *Pterocyclon* in the two-jointed funiculus, are separable from that genus by the long antecoxal portion of the prosternum and the structure of the elytra.

Any sexual differences which may exist in the species of *Amphicranus* are unknown to me; Eichhoff, without any ascertainable reason, has in *A. retusus* indicated as

the two sexes those forms which have respectively a black and a sanguineous prothorax. It may be so. Without some clue as to the possibly sexual nature of features, such as the peaked prothorax of *A. fastigatus*, it is necessary to include in the genus forms which in time will probably be separated therefrom.

If *Steganocranus*, Eichh., be distinct from *Amphicranus*, it must be so by virtue of its broadly triangular antennal club, which is probably characteristic of the female.

Examples of *Amphicranus* are rarer in collections than those of any other considerable genus of the family; this seems to be due to their retired habits. These insects bore into large trunks, and are only to be obtained when sitting in the mouth of the burrow, or, more rarely, crawling on the outside of the tree.

The collection of the late Alexander Fry, made during a long residence in Brazil, contains only eight examples; and four species alone in the genus are known to me by more than single specimens.

The species are exclusively Neotropical. Five have been described, of which one is Mexican. A synopsis follows of all known to me; they amount to nineteen, of which twelve are from Central America.

1.	Sutures of the club strongly curved or angulate	2.
	Sutures subtransverse, club usually small, not densely pubescent . .	11.
2.	Prothorax strongly but not abruptly declivous in front, uniformly asperate	3.
	Prothorax subabruptly declivous in front, with a transverse callus at the summit of the declivity, the asperities aggregated into irregular ridges	8.
3.	Anterior opening of the prothorax trisinuate or emarginate in front .	4.
	Anterior opening not trisinuate or emarginate	5.
4.	Elytra explanate behind and not divaricate at the apex of the suture, the sutural angles sharp	[*retusus*, Eichh.]
	Elytra divaricate at the apex of the suture, the sutural angles rounded.	[*thoracicus*, Er.]
5.	Elytra not divaricate at the apex of the suture, black, the prothorax red.	[*fryi*, sp. n.]
	Elytra divaricate at the apex of the suture	6.
6.	Base of the protharax transversely strigose in the middle, elytra black.	7.
	Base of the prothorax punctate in the middle, basal half of the elytra rufous; underside and legs pale	*balteatus*, sp. n.
7.	Margins of the elytral excavation with two teeth on each side; abdomen ferruginous	*elegans*, Eichh.
	Margins of the excavation with three or more teeth on each side; abdomen dark	[*politus*, Eichh.]
8.	Prothorax and elytra rufous, with the apices abruptly black	*belti*, sp. n.
	Prothorax and elytra black or fusco-piceous, some spots on the former and the base of the latter testaceous	9.
9.	Inner face of the apical elytral process unarmed	10.
	Inner face of the process with a conical spine	[*bipunctatus*, Eichh.]

10. Apical elytral process scarcely longer than broad . . . . . [*schaufussi*, sp. n.]
    Apical elytral process much longer than broad . . . . . *torneutes*, sp. n.
11. Antennal club with no marginal fringe; funiculus 3-jointed . . . 12.
    Club with a fringe of long hairs, at least in one sex; funiculus 2-jointed. *hybridus*, sp. n.
12. Elytra explanate at tip, subcontiguous at the apex of the suture; declivity conically elevated in the middle . . . . . 13.
    Elytra produced, and divaricate at tip . . . . . 14.
13. Elytra evidently wider than the length from the base to the top of the declivity . . . . . *brevipennis*, sp. n.
    Elytra not wider than the length from the base to the declivity . . . [*grouvellei*, sp. n.]
14. Processes of the elytra gouge-like, concave internally, narrowly separated . . . . . 15.
    Processes narrow, clubbed, not concave internally, remote, convergent. *propugnatus*, sp. n.
15. Prothorax rounded at apex . . . . . 16.
    Prothorax produced beyond the head into an acute peak . . . . . *fastigatus*, sp. n.
16. Elytra unicolorous black or piceous . . . . . 17.
    Elytra testaceous-yellow, with the apex darker . . . . . 18.
17. Apical processes of the elytra transverse, narrowly separate . . . . *collaris*, sp. n.
    Processes much longer than broad, rather widely separate . . . . . *tenuis*, sp. n.
18. Outer apical angle of the elytral process armed with a strong inwardly directed tooth . . . . . *filiformis*, sp. n.
    The angle rounded and unarmed . . . . . *terebella*, sp. n.

1. **Amphicranus elegans.** (Tab. IX. figg. 5; 5 *a*, antenna; 5 *b*, apex of elytra.)

Amphicranus elegans, Eichh. Berl. ent. Zeitschr. 1868, p. 276 [1]; Rat. Tom. p. 463 [2].

Hab. Mexico [1], Toxpam (*Sallé*), Cordova (*Eichhoff* [2]); Nicaragua, Chontales (*Belt*).

This species, one of the largest of the Tomicini, is distinguishable by its colour, deep black with the abdomen bright ferruginous. Three specimens from Toxpam and one from Chontales represent it in our collections. The last-mentioned example is smaller, with the elytra shorter and less produced, than the others; it corresponds with the form which Eichhoff queries as a variety. This there is at present no reason to doubt *.

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* Reference may be made here to some other species which have not been found in Central America :—

Amphicranus thoracicus.

Amphicranus thoracicus, Er. Wiegm. Arch. 1836, i. p. 37 [1].
Piezorhopalus nitidulus, Guér. Rev. Zool. 1838, p. 107 [2].
Amphicranus crenatus, Eichh. Rat. Tom. p. 465 [3].

Hab. Guiana, Cayenne [1]; Brazil [2 3], Rio Janeiro (*Fry*).

An example in my collection, which agrees completely with Eichhoff's type, has been kindly compared with that of Erichson by Dr. Kolbe, who informs me that he regards it as certainly *A. thoracius*, Er. Guérin's species was founded on a colour-variety, such as Eichhoff himself indicated in *A. retusus* as a sexual distinction.

2. **Amphicranus balteatus,** sp. n. (Tab. IX. figg. 6; 6 *a*, apex of elytra.)

Elongatus, nitidus, glaber, niger, elytris a basi usque ad medium rufo-testaceis, subtus post prothoracem, cum pedibus, testaceus; prothorace oblongo, anterius subangustato, margine apicali medio dente instructo; elytris a medio oblique excavatis, ad apicem productis divaricatis, ambitu excavationis utrinque prope suturam tridentato, dente 3° maximo.

Long. 8 millim.; lat. 2·2 millim.

Elongate, shining, glabrous. Head hidden in the type, its underside fusco-testaceous; antennæ infuscate, the club black, large, obovate, pubescent, the sutures slightly curved. Prothorax elongate, somewhat elliptic, the sides convergent from the base, subconstricted towards the apex, which is circularly rounded, with a small median marginal tooth; surface black, becoming piceous at the sides, cylindrical to near the apex, thence strongly declivous, with transverse rows of asperities, the horizontal portion in front with traces of asperities, behind very finely punctured. Scutellum triangular, piceous. Elytra obliquely declivous from the middle, strongly produced and divaricate at the apex, bright ferruginous, with the apical half black; surface finely punctured in indistinct rows, each lateral margin of the excavation with three teeth close to the suture, of which the third is the largest, its prolongation with an incurved pointed median elevation, thence declivous and rounded to the apex; fundus shining, somewhat hollowed at the apex and scantily hairy, obsoletely punctured, with the suture elevated. Underside, behind the prothorax, testaceous, paler posteriorly; coxæ and legs pale testaceous, the knees darker.

Hab. Guatemala, Cerro Zunil (*Champion*).

A single example of this species, one of the handsomest of the Scolytidæ, was taken. The contrast between the pale underside and legs, the black thorax, and parti-coloured elytra is striking.

Amphicranus retusus.

Amphicranus retusus, Eichh. Berl. ent. Zeitschr. 1868, p. 276 [1]; Rat. Tom. p. 466 [2].

Hab. Guiana, Cayenne [1]; Ecuador; Brazil, Rio Janeiro (*Fry*).

This species varies in size, colour, and the sculpture of the elytral excavation; the anterior tooth of the latter may be nearly obsolete and indistinctly bifid, the posterior tooth and the ridge running inwards from it are variable in size, and the punctuation of the fundus varies in distinctness. An example from Cayenne, and two from Ecuador, examined by me, have the prothorax sanguineous, with a black basal limb; in the former the anterior margin and flanks also are dark. In the Ecuador specimens the forehead is visible; it is obscure ferruginous, opaque, closely shagreened, and obsoletely punctured; over the mouth is a raised oval space, more coarsely shagreened, and apparently a stridulating-organ. Mr. Fry's example from Rio Janeiro has a fasciculus of longish hairs on the inner face of the antennal club; by analogy with other genera this would appear to be a female character. The prothorax is black.

Amphicranus fryi, sp. n.

Elongatus, ater, prothorace sanguineo, pedibus ferrugineo-piceis; differt ab *A. retuso* statura minore, magis attenuata, prothorace quam latitudine amplius tertia parte longiore, apice fortius rotundato, margine apicali ipso medio nullo modo emarginato, immo vero subprominulo, disco lateraliter ad basim confertius punctato; excavationis elytris fundo magis elongato, profundiore, præter suturam æqualiter concavo, dente 2° postice haud crenato.

Long. 7 millim.; lat. 2 millim.

Hab. Brazil, Rio Janeiro (*Fry, in Mus. Brit.*).

The absence of the anterior prothoracic emargination and the more slender form distinguish this species which in other respects does not markedly differ from *A. retusus*.

3. **Amphicranus belti,** sp. n. (Tab. IX. figg. 7; 7 *a*, apex of elytra.)

Elongatus, nitidus, glaber, ferrugineo-rufus, prothorace et elytris ad apicem nigris; prothorace a basi usque ad apicem parallelo, inde rotundato, margine bisinuato; elytris a medio obliquissime excavatis ad apicem productis emarginatis, margine declivitatis prope suturam utrinque bidentato.

Long. 7 millim.

Elongate, shining, glabrous, ferruginous-red, with the anterior third of the prothorax and the apical half of the elytra black. Head hidden in the type, piceous; antennæ ferruginous, the club fuscous, obovate, thinly pubescent, the first suture angulate towards the apex, the second curved, outer surface with a smooth spot at base. Prothorax oblong, parallel-sided from the base to its anterior third, thence constricted and subsinuate on either side, the apical margin thickened and ridged; in front more strongly declivous than in *A. balteatus*, the declivity subangulate at its junction with the cylindrical portion and marked with irregular concentric elevated lines of fused asperities; surface finely asperate immediately behind the angle of the declivity, behind smooth and imperceptibly punctured. Elytra as in *A. balteatus*, with the divaricate apical prolongations somewhat longer, the surface rather more distinctly punctured; the margin of the excavation armed with two spines only near the suture, of which the lower is the larger; the lateral border less prominently angled before the apex, less incurved and armed with a smaller tooth, fundus of the emargination more glossy. Underside and legs reddish-testaceous, with the knees and apex of the abdomen darker.

Hab. NICARAGUA, Chontales (*Belt*).

This species is inferior in size to *A. balteatus*, from which it is distinguished by the red-and-black thorax. The single example has been so injured by pinning that the width cannot be measured.

4. **Amphicranus torneutes,** sp. n. (Tab. IX. figg. 8; 8 *a*, apex of elytra.)

Elongatus, cylindricus, piceo-fuscus, pedibus pallidis; prothorace anterius obscuriore, lateraliter indistincte testaceo-maculato, ad apicem sat fortiter declivi, margine replicato; elytris ad basim obscure testaceis, ad apicem longe productis, declivitate obliqua, ambitu superne utrinque subacute tridentato.

Long. 6·3 millim.; lat. 1·5 millim.

Very elongate, cylindrical. Head fusco-piceous, the front dull, punctured laterally, with a transverse-oval subcallose space over the mouth; eyes oval, rather small, convex, emarginate; antennæ piceous, club infuscate, rather large, oval, with short dense pubescence and a few longer hairs, the sutures shining, curved, more strongly on the outer face, the basal joint with a smooth spot on each side. Prothorax one-third longer than broad, the base curved, its hind angles obtusely rounded, the sides parallel, the apex obliquely constricted and laterally subsinuate, rounded in the middle, with a thickened and reflexed margin; surface fuscous-brown, darker apically, with an indistinct testaceous spot over each flank, strongly but not vertically declivous in front, shortly and thinly pubescent, asperate with irregularly scattered elevations, close in front and forming a ridge concentric with the reflexed margin, the declivity separated by a shallow transverse sulcus from a finely asperate callus which forms the anterior boundary of the horizontal portion, which is subopaque, finely and sparsely punctured, more strongly towards the transversely-impressed base. Scutellum rounded-triangular, shining, impressed, infuscate. Elytra as wide as the prothorax and three-fourths longer, truncate at base, with rounded humeral angles, the sides parallel, slightly convergent before the apical processes, which are obliquely rounded at the tip and separated by a deep narrow emargination with divergent sides, their apical angles rounded; surface nearly cylindrical, fuscous-black, obscurely testaceous towards the base, shining, finely punctured in remote rows and scantily hairy near the suture, which is impressed before the excavation; the latter oblique, beginning behind the middle of the elytra, shining, with scattered subasperate punctures, its margins scantily hairy, transverse above and not oblique, each with three spinous teeth near the suture, the first and second small, the third stout and subacute, thence becoming subcrenate and falling away in an oblique curve to the middle of the declivity, where it forms the upper border of the apical process; the process much longer

than broad, concave internally, rather dull, with scattered shortly-piliferous punctures. Underside fuscous. Legs pale testaceous, the knees and tibial teeth infuscate.

Hab. MEXICO, Chilpancingo in Guerrero (*H. H. Smith*).

One example. Allied to *Amphicranus bipunctatus*, Eichh., from Colombia. The latter is not more than half the size of *A. torneutes*; it has two well-marked spots close together on the disc of the prothorax, and the basal half of the elytra bright testaceous; the elytra are less produced, and the inner face of the apical process bears a strong acute spine opposite the inclined angle of its border *.

5. **Amphicranus brevipennis,** sp. n. (Tab. IX. figg. 9; 9*a*, apex of elytra.)

Cylindricus, subopacus, niger, antennis pedibusque ferrugineis; prothorace elongato, ad apicem obtuse rotundato, supra antice fortiter convexe declivi et lineis rugarum concentricis asperato; elytris prothorace vix longioribus, ad apicem explanatis, haud productis, punctatis, mox ante medium oblique declivibus, retusis, declivitate præter suturam utrinque conice elevata, ambitu per totum valde elevato in singulo elytro ante medium dentato, subtus ad suturam breviter angustissime emarginato.

Long. 3·6 millim.; lat. 1·5 millim.

Cylindrical, somewhat dull, black. Head retracted in the type; antennæ ferruginous, the club infuscate, large, ovoid, the lower border rather strongly convex, the upper border nearly straight towards the apex, surface entirely dull, shortly pubescent, the sutures subtransverse. Prothorax nearly one-half longer than broad, obtusely rounded at apex, the sides parallel behind the anterior third, the hind angles subrectangular, the basal margin subtruncate; surface strongly and convexly declivous for its anterior third and asperate with concentric lines of elevated rugæ, behind moderately shining, sparsely punctured, subcylindrical, somewhat depressed in the middle, with a slight transverse elevation at the posterior third, behind which it is subasperate with fine transverse rugæ. Scutellum subtransverse, rounded, shining. Elytra scarcely as wide as the prothorax and about as long, truncate at base, the humeral angles subrectangular, slightly rounded, the sides subparallel, apices explanate and not produced; surface cylindrical, obliquely retuse from before the middle to the apex, and ampliated round the margins of the declivity, shining, punctured in irregular rows, and with fine transverse wrinkles; declivity oval, shining, strongly and densely punctured, hollowed laterally, and elevated in the middle into a double cone, its apices formed by the everted sutural borders, the side-margins strongly elevated and shining throughout, produced on each side before the middle into a blunt tooth and explanate posteriorly; apex of the suture narrowly dehiscent. Underside piceous-black; prosternum very short before the anterior coxæ and not elevated or produced. Legs testaceous-brown.

Hab. GUATEMALA, San Isidro (*Champion*).

One example. The absence of the terminal elytral processes and sutural emargina-

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* The following species is allied to *A. torneutes* and *A. bipunctatus*:—

Amphicranus schaufussi, sp. n.

A. torneuti simillimus; differt statura majore, colore piceo-nigro, antennis (clava excepta) pedibusque ferrugineis; prothoracis margine apicali medio subangulato, dorso postice subtilius punctulato; dente in margine superiore processus apicalis validiore, processu ipso breviore fere æque lato quam longo.

Long. 8·5 millim.

Hab. VENEZUELA (*in coll. Schaufuss*).

The differences are sufficiently indicated above. If the apical process be defined by a line transverse to the extremity of the suture, it will be seen to be about as long as broad in this species, and more broadly rounded at the tip, whereas in *A. torneutes* it is considerably longer than broad.

tion distinguishes this and the following species from all others of the genus except *A. retusus*, Eichh.*

6. **Amphicranus collaris,** sp. n. (Tab. IX. figg. 10; 10 *a*, apex of elytra.)

Oblongus, nitidus, glaber, ferrugineus, elytris nigris, abdominis segmentis tribus ultimis infuscatis; prothorace anterius constricto et lateraliter sinuato, supra ad apicem oblique rotundatim declivi, asperato; elytris vix perspicue punctatis, post medium oblique excavatis, ad apicem brevius productis, anguste divaricatis, margine excavationis utrinque prope suturam unispinoso, prope apicem dente quadrato exstructo.

Long. 4·2 millim.; lat. 1·4 millim.

Oblong, moderately elongate, shining, glabrous, ferruginous, the elytra deep black. Head infuscate, the front flat below, dull, reticulate, with a few punctures, the mouth not fringed; antennæ ferruginous, third joint of the funiculus very short and hard to distinguish, the club broad obovate, its outer face pubescent, with transverse sutures, the apical border ciliate with long hairs. Prothorax one-third broader than long, obliquely constricted and bisinuate towards the apex, which is moderately rounded and bordered, sides somewhat rounded behind the constriction, humeral angles subrectangular, the base truncate; surface a little depressed along the base, subcylindrical to the anterior third, thence obliquely rounded and not strongly declivous to the apex, asperate over the anterior third, the asperities very fine behind and not arranged in lines, behind feebly reticulate and punctured, the punctures more perceptible towards the base, which is subimpressed on each side. Scutellum small, rounded, black. Elytra less than one-half longer than the prothorax, shortly produced at apex, with a very small narrow median emargination, truncate at base, with rounded humeral angles, the shoulders scarcely elevated, the sides feebly rounded and convergent behind, strongly incurved at the outer apical angles, the apical margins subtruncate; surface subcylindrical, feebly punctured in rows, more perceptibly near the suture, excavate behind the middle; fundus of the excavation concave, shining, rather closely punctured, the suture not elevated, its margins each with a pointed tooth above near the suture, preceded by a small tubercle, and with a short oblique quadrate lobe near the outer apical angle. Underside and legs ferruginous, the last three abdominal segments infuscate.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One example. In colour this species resembles *A. thoracicus*, Er., but it is much

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* **Amphicranus grouvellei,** sp. n.

Cylindricus, nitidus, niger vel piceo-niger, antennis pedibusque testaceis; *A. brevipenni* omnino simillimus, sed duplo minor, angustior, elytris proportione longioribus, declivitate haud ante medium incipiente, margine laterali utrinque obtusius cuspidato.

Long. 2·8 millim.; lat. ·9 millim.

Cylindrical, rather shining, black or pitchy-black, the antennæ and legs testaceous or testaceous-brown. About half the size of *A. brevipennis* and more elongate; the prothorax a little longer, less obtusely rounded in front, with the apical asperities not forming distinct lines, the elevation at the basal third less marked. Elytra distinctly longer than the prothorax, less evidently ampliated round the margins of the declivity, the latter beginning at and not before the middle, the marginal tooth on either side forming an obtuse cusp.

Hab. ? BRAZIL.

I have received two examples from M. Grouvelle; both were found in tobacco-refuse, probably Brazilian. In this species the length of the suture from the base to the summit of the declivity is six-sevenths of the width of the elytra; in *A. brevipennis* it is less than three-fourths of the width. Possibly *A. grouvellei* is a small form of *A. brevipennis* and not distinct. The differences in proportion justify its separation for the present.

smaller, with the underside ferruginous, the prothorax not abruptly declivous, and the elytra differently constructed.

7. **Amphicranus tenuis,** sp. n. (Tab. IX. figg. 11 ; 11 *a*, apex of elytra.)

Linearis, cylindricus, nitidus, ferrugineus, prothorace anterius subinfuscato, elytris piceo-nigris ; illo ad apicem subconstricto, supra caput subproducto, oblique convexe declivi, margine antico replicato ; elytris subtiliter punctatis, posterius oblique excavatis, ad apicem longe productis, et sat late discretis, ambitu utrinque superne unispinato, pagina processus interiore in medio dente singulo armata.

Long. 3·4 millim. ; lat. ·8 millim.

Linear, cylindrical, shining, ferruginous, the elytra piceous-black. Head infuscate ; antennæ testaceous, funiculus distinctly triarticulate, club oval, thinly pubescent, its sutures curved. Prothorax more than one-half longer than broad, parallel-sided, strongly rounded and slightly narrowed at apex, somewhat produced beyond the head, its anterior margin reflexed, the hind angles subobtuse, the base truncate ; surface subinfuscate anteriorly, obliquely and rather abruptly declivous at apex, and asperate with strong elevations in two or three concentric lines, moderatly shining behind, with uniform scattered fine punctures and delicate close reticulation. Scutellum small, acute triangular, impressed. Elytra as wide as the prothorax and one-half longer, truncate at base, the humeral angles rounded, the sides parallel, slightly convergent outside the apical processes, the latter obliquely rounded at the tip, separated by a space deeper than its width and wider than the processes ; surface shining, finely punctured in rows, excavation beginning at the hinder third (measured along the suture), oblique, dull and subimpunctate, its margins glabrous, oblique above, with a small tooth close to the suture followed by a larger acute spine, after which they form the nearly horizontal upper boundary of the apical process and are indistinctly toothed at the junction with its posterior border ; inner face of the process with a small sharp tooth close to the middle of the upper border. Underside and legs fusco-ferruginous.

Hab. ? MEXICO.

I have received one specimen, believed to be from the refuse of Mexican tobacco.

8. **Amphicranus filiformis,** sp. n. (Tab. IX. figg. 12 ; 12 *a*, apex of elytra.)

Angustissimus, sat nitidus, capite et prothorace testaceis, hujus apice anguste nigro-maculato ; elytris sordide stramineis, lateribus et apice nigricantibus, subtus post prothoracem infuscatus ; antennis pedibusque testaceis ; prothorace latitudine sesqui amplius longiore, apice rotundato sat fortiter declivi ; elytris subtiliter lineato-punctatis, posterius oblique excavatis, ad apicem longe productis, margine excavationis ciliato, supra ad suturam utrinque unidentato.

Long. 4 millim. ; lat. ·8 millim.

Very long and narrow ; moderately shining. Head testaceous, the mouth infuscate, front flattened and rather dull, glabrous, with short oral fringe ; antennæ testaceous, third joint of the funiculus indistinct and fused with the club, the latter obovate, rather narrow, of moderate size, with curved sutures, thinly pubescent, with short scale-like hairs intermingled with a few longer ones and absent over the basal half of the first joint. Prothorax three-fourths longer than broad, cylindrical, truncate at base, the hind angles rounded, sides parallel, the apex rather strongly rounded and very slightly constricted ; surface somewhat strongly declivous and convex in front, the anterior opening oblique and not horizontal, testaceous, the declivous portion black at the apex, with a light median line, asperate with coarse granules and finely pubescent, the horizontal portion shining, finely and sparingly punctate, subasperate with transverse rugæ and slightly infuscate over the base. Scutellum rather large, rounded, black, shining. Elytra as wide as the prothorax and nearly one-half longer, prolonged into two parallel processes, truncate at the base, the humeral angles obliquely rounded, the sides parallel, the processes obtusely rounded at apex and separated by a space nearly equal to either of them in width and about one-half longer than wide ; surface cylindrical, obscure stramineous, with the sides and apex black, finely punctured in lines, the punctures appearing as blackish spots in the substance of the elytra ; declivity oblique, beginning behind

the posterior third (measured along the suture), undulate, shining, strongly punctured, its margin pilose with long hairs and subserrate, armed on each side with a blunt tooth close to the suture, thence extending obliquely downwards to the middle point, whence it is produced horizontally backwards to form the upper border of the apical process, the latter with a sharp inwardly directed tooth at its upper apical angle, its inner face concave, pilose. Underside behind the prothorax infuscate, the abdomen rufescent at apex; prosternum very long before the anterior coxæ, its præcoxal border quite straight. Legs testaceous.

Hab. Mexico, Omilteme in Guerrero (*H. H. Smith*).

One specimen. This species is in all respects a normal member of that section of the genus which includes the smaller and more elongate forms, except that the third joint of the funiculus is evanescent.

9. **Amphicranus terebella,** sp. n. (Tab. IX. figg. 13; 13 *a*, apex of elytra.)

Linearis, sat nitidus, glaber, testaceus, elytris flavo-testaceis, ad apicem rufescentibus; prothorace latitudine fere duplo longiore, apice rotundato, oblique declivi, margine subreplicato; elytris illo vix sesqui longioribus, ad apicem longe productis, separatis, superne tenuiter lineato-punctatis, declivitate obliqua, nitida, lævi, ambitu utrinque serrato et spina longa armato, processu intra apicem dente acuto instructo.

Long. 2·8 millim.; lat. ·63 millim.

Cylindrical, linear, four and a half times longer than broad, rather shining, glabrous, testaceous, the prothorax reddish, the elytra yellowish, becoming ferruginous at apex, with the margins and spines almost piceous. Head concealed in the type; antennæ testaceous, the funiculus triarticulate, the club oval, pubescent, the first suture scarcely, the second evidently curved. Prothorax cylindrical, nearly twice as long as broad, circularly rounded at apex, with a slightly reflexed margin, parallel-sided, the hind angles rectangular, the base truncate; surface obliquely declivous and convex in front, asperate, the asperities forming a single raised line parallel to the margin and becoming imbricate behind, horizontal portion moderately shining, sparsely punctured. Scutellum acute triangular, impressed, testaceous. Elytra at base narrower than the prothorax and almost one-half longer, the shoulders obtuse, the sides oblique at the base, thence parallel to the apical processes, which are twice as long as broad, having the outer margin slightly curved and rounded at the outer apical angle and separated by a space one-half longer than broad, and widened posteriorly; surface shining, with rather remote lines of fine punctures; excavation beginning behind the posterior third, measured along the suture, oblique, shining, nearly smooth, its borders somewhat oblique above, acute, finely serrate and with a long subacute spine on each side, behind which they are continued in an oblique curve to form the upper border of the apical processes; inner face of the latter flattened, with a sharp conical tooth near the tip of the inner border. Underside and legs testaceous.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One specimen. A curious little insect, remarkable for the extremely long and narrow thorax; in form it represents the opposite extreme to that found in such typical members of the genus as *A. thoracicus*, Er.

10. **Amphicranus fastigatus,** sp. n. (Tab. IX. figg. 14; 14 *a*, head and prothorax; 14 *b*, apex of elytra.)

Linearis, cylindricus, sat nitidus, glaber, testaceus, elytris pallidioribus, his cum prothorace ad apicem infuscatis; antennarum clava ovali; prothorace in processum acuminatum supra caput producto; elytris ante medium obliquissime excavatis, ad apicem in processus longos parallelos productis, margine excavationis utrinque prope suturam tridentato et in medio dente fortiori armato.

Long. 4·2 millim.; lat. 1 millim.

Elongate, cylindrical, rather shining, glabrous. Head testaceous, front subconvex, dull, with an oval elevated area over the mouth, the latter blackish, fringed; eyes broad oval, not deeply emarginate; antennæ testaceous-yellow, scape slender, funiculus triarticulate, club obovate, not large, infuscate at apex, shortly pilose, the sutures curved, subangulate in the middle. Prothorax about twice as long as broad, slightly rounded at base, the hind angles broadly rounded, the sides subampliated behind, thence parallel, the apex produced beyond the head into an acuminate declivous peak, its side-margins nearly straight with the border reflexed, its apex with a strong tooth on the under surface; above slightly curved from base to apex, obliquely declivous in front, testaceous, the apical process subinfuscate and roughened with fine imbricate asperities, behind rather dull, finely and irregularly punctured with traces of a subelevated smooth median line. Scutellum moderate, triangular, subimpressed, testaceous-brown. Elytra scarcely as wide as the prothorax and one-fourth longer, truncate at base, the humeral angles rounded, oblique, the sides at first parallel, somewhat convergent behind, the apices strongly produced, obliquely rounded at the tip, separated by a deep interspace with divaricate sides, very narrow at the base, and more than twice as long as its width at the apex; surface yellow-testaceous, becoming piceous at the margins of the excavation, finely punctured in remote rows; excavation very oblique, beginning before the middle of the elytra and preceded by an impression along the suture, its surface flat in the middle, shining, rather feebly punctured, the margins acute, very oblique, each with three small spines above and a larger spine in the middle, and angulate at the junction with the apical border of the process, the angle somewhat inflexed; inner face of the process shining and punctured at the tip. Underside light testaceous; anterior opening of the prothorax embracing the head above and not extending along the apical process. Legs testaceous, the knees infuscate.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

One specimen. This singular-looking insect ought, on the structure of its prothorax, to be referred to Eichhoff's genus *Steganocranus*; the form of the prothorax is reproduced to some extent in the following species, *A. propugnatus*. The antenna of *Steganocranus*, as figured by Eichhoff, is, however, very different from anything observed in the present genus, possessing a broadly triangular fimbriate club something like that of *Pterocyclon fimbriaticorne*. Whether its structure, or that of the prothorax, differs sexually, is unknown.

11. **Amphicranus propugnatus,** sp. n. (Tab. IX. figg. 15; 15*a*, apex of elytra.)

Linearis, sat nitidus, nigro-piceus, elytris fusco-testaceis, lateribus et apice nigricantibus; antennis pedibusque ferrugineis; prothorace antice oblique convexe declivi, supra caput producto, margine apicali replicato medio tuberculato; elytris distincte lineato-punctatis, ad apicem anguste productis et late separatis, excavatione ipsa fortiter declivi, ambitu utrinque 4-dentato, dentibus 1°, 2° parvis, acutis, 3° magno, subtruncato, 4° triangulari.

Long. 3·8 millim.; lat. ·9 millim.

Linear, cylindrical, rather shining. Head black, the front convex, rather dull, glabrous, closely and finely punctate, impressed over the mouth, the latter fringed; antennæ ferruginous, the funiculus triarticulate, club rather broad obovate, pubescent, its sutures scarcely curved. Prothorax two-fifths longer than broad, cylindrical and parallel-sided, obliquely narrowed and produced downwards and forwards beyond the head but not sharply acuminate, the apical margin reflexed, rounded and quadrituberculate in the middle, the hind angles rounded, the base sub-bisinuate; surface piceous-black, in front obliquely and convexly declivous, asperate with coarse tubercles, and finely pubescent, behind shining, with fine scattered punctures, not subasperate over the base. Scutellum moderately large, rounded triangular, black, shining. Elytra as wide as the prothorax and one-third longer, truncate at base, with the humeral angles rounded, the sides parallel, the apices produced into two remote slightly converging processes; surface cylindrical, testaceous-brown, the sides and apex piceous-black, with distinct rows of punctures; excavation beginning

at the hinder fourth (measured along the suture), strongly declivous, concave from side to side, shining, closely and moderately strongly punctured, its margins very oblique, pilose with long hairs, armed on each side with four teeth, the first and second small, at the apices of the first and third interstices respectively, the third, a large oblong lobe, directed backwards, flattened laterally, and subtruncate, separated by a deep notch from the fourth, which is smaller, triangular, subacute, and situated on the upper border of the apical process, the latter narrow, somewhat clubbed, slightly incurved, separated from its fellow by a wide interspace, not quite so deep as broad. Underside fusco-piceous; prosternum wide before the anterior coxæ, its præcoxal border straight. Legs ferruginous.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

One specimen. This insect differs from the common type of *Amphicranus* in having the prothorax shaped somewhat as in *A. fastigatus*, except that it is not acutely produced, and in the distinct character of the elytral processes.

12. **Amphicranus hybridus,** sp. n. (Tab. IX. figg. 16; 16 *a*, apex of elytra.)

Cylindricus, sat nitidus, testaceus, prothoracis apice infuscato, elytris sordide stramineis, ad latera et ad apicem nigricantibus; antennarum funiculo 2-articulato, clava ovali, ciliata; prothoracis apice verticaliter declivi, obtuso, margine everso; elytris ad apicem oblique retusis, subexcavatis, vix productis, ad summam suturam emarginatis, ambitu retusionis ovali, supra bispinato, fundo ad apicem præter suturam in singulo elytro spinato.

Long. 3 millim.; lat. ·8 millim.

Cylindrical, linear, rather shining. Head fusco-testaceous, the front rather flat, dull, glabrous, subtuberculate over the fringed mouth; antennæ testaceous, scape slender, the funiculus apparently 2-jointed, the second joint short, club oval, oblique, its lower border more convex and subangulate, the sutures curved, ciliate with long hairs arising from the inner face, chiefly from the basal joint, and upper border. Prothorax about one-half broader than long, obtusely rounded in front, with the margin explicate, the sides subparallel, the hind angles obtuse, the base sub-bisinuate; surface testaceous, infuscate at the apex, strongly convex and vertically declivous in front, rather finely asperate and shortly pubescent, behind moderately shining, sparsely and finely punctured, the punctures closer and subasperate over the middle of the base. Scutellum oblong, rounded, impressed, piceous-black. Elytra as wide as the prothorax, and rather more than one-third longer, separately subconvex at base, the shoulders obliquely rounded, sides subparallel, slightly incurved at the apices, which are shortly produced in the plane of the declivity; surface sordid stramineous, with the extreme basal border, side-margins, and apex blackish, with scattered longish hairs near the suture, finely punctured in rows; declivity very oblique, beginning at the hinder third, scarcely excavate, subconvex near the suture, subconcave towards the hind angles, with thin long pubescence, not very shining, punctured, and bearing a truncate spine on each side near the apex of the suture, its margins oval, narrowly elevated, above with a short spine on each side of the suture, and pilose with long hairs towards the apex; the apical processes somewhat convergent, separated by an emargination about equal to their width and not quite so deep. Underside behind the prothorax infuscate; the legs testaceous.

Hab. GUATEMALA, near the city (*Champion*).

One example. This insect has the antennæ of a *Pterocyclon* and is probably a female, as the club is fringed; I cannot see the slightest trace of a third joint to the funiculus. The prothorax is, however, as strongly declivous in front as in any *Amphicranus*, and the prosternum is that of the present genus. The apical processes of the elytra, though less prominent than in its congeners and lying in the plane of the declivity, are nevertheless better developed and separated by a much deeper intervening space than is found in any *Pterocyclon*. The species must at present be regarded as a form intermediate between that and the present genus.

Fam. ANTHRIBIDÆ *.

Judging from the great number of new genera and species which are constantly being discovered, we know only a small percentage of the Anthribidæ actually in existence. With some exceptions, the species are not found in large numbers of individuals, owing to their habits and, to no less extent, to their great resemblance to the bark of trees on which they occur. The present treatise offers an illustration of the great increase in the number of known species of Anthribidæ when a tropical district has been more exhaustively examined. Hardly three dozen forms were known from Central America, while the material now before me comprises close on 200 species. That these do not fully represent the Anthribid fauna of Central America is abundantly evident from the high percentage of species found only in single specimens. The material from Mexico and Costa Rica is especially meagre, Guatemala and Chiriqui being the best explored districts, having yielded by far the larger number of species here enumerated. The erection of new genera has been restricted as far as it was possible to do so without obscuring the generic division of the family. The number of forms common to Central and South America is very small. However, it is hardly possible to obtain at present a correct idea of the distribution of the various species, nor is the material extensive enough for a study of the geographical variability of these insects. These are questions which can be fruitfully entered into only when we know more Anthribids and are better acquainted with them. As regards the classification of the family we are likewise suffering from a lack of sufficient material. The exposition of it given by Lacordaire in his admirable work 'Genera des Coléoptères,' vii. (1866), is naturally somewhat antiquated, the division into small groups of genera as therein given, moreover, not being tenable. The main division of the Anthribidæ into two subfamilies, however, is, in my opinion, quite correct, the Pleurocerinæ, with a lateral antennal groove, being well distinguished from the Anocerinæ, with a dorsal antennal groove. Though this grouping is natural, some care is necessary in drawing the line correctly. There are a number of Pleurocerinæ in which the upper edge of the antennal groove is not distinctly carinate, or in which this carinate edge is moved dorsad, the groove being open in dorsal aspect. These forms may easily be mistaken for Anocerinæ.

I have abstained at present from further dividing the Pleurocerinæ, which subfamily comprises the bulk of the family, into groups of genera—a difficult task, which must be postponed till we have collected sufficient facts to attempt a general classification

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of the Anthribidæ. The appended key to the genera represented in Central America will, however, be found useful in determining the insects.

Key to the Genera.

A. Antennal groove lateral: PLEUROCERINÆ.

a.	Lateral carina of prothorax extending to apex	*b.*
	Lateral carina of prothorax not reaching apex	*c.*
b.	Apex of rostrum with rounded mesial sinus	Genus No. XXII.
	Apex of rostrum without mesial sinus	Genus No. XXIII.
c.	Ventral edge of mandible with tooth	Genus No. XXI.
	Only the dorsal edge with tooth	*d.*
d.	Antennal groove open	*e.*
	Antennal groove covered	*f.*
e.	Club of antenna consisting of three segments	Genus No. V.
	Club of antenna consisting of four segments	Genus No. IV.
f.	Eye entire, often obliquely truncate in front, sometimes dorsal .	*g.*
	Eye distinctly sinuate, always lateral	*s.*
g.	Eye lateral, truncate in front, broader than long, coarsely granulated; antennal groove close to eye, triangular, widest above, almost open; prothoracic carina basal	Genus No. XX.
	Eye rounded or oblique; antennal groove separate from eye or covered by the upper edge, which is carinate	*h.*
h.	Rostrum subcylindrical at base, widened at apex, but not much flattened; eye lateral	*i.*
	Rostrum flat, at least at apex, often very short	*j.*
i.	Eye nearly circular, subtruncate in front; three strong dorsal carinæ on rostrum	Genus No. I.
	Eye nearly circular, subtruncate in front; one distinct dorsal carina on rostrum	Genus No. II.
	Eye elliptical, coarsely granulated; one distinct dorsal carina on rostrum	Genus No. III.
j.	Eye elliptical, lateral; rostrum spatulate	*k.*
	Eye obliquely truncate in front or dorsal	*l.*
k.	Antenna with long bristles	Genus No. XII.
	Antenna without bristles; elytra flattened at suture; frons triangular	Genus No. XIX.
	Antenna without bristles; elytra flattened at suture; frons not triangular	Genus No. XVIII.
	Antenna without bristles; elytra not flattened at suture . . .	Genus No. XI.
l.	Tibiæ very rough with long thick hairs	Genus No. IX.
	Tibiæ not long-hairy	*m.*
m.	Eye finely granulated, oblique, dorsal or subdorsal, its upper edge more or less distinctly incurved, the edge of the frons forming a kind of eyebrow	*n.*
	Eye evenly rounded above	*q.*

n. Mesosternal process angulate at sides . . . . . *o*.
Mesosternal process evenly narrowed from base to apex . . . *p*.
o. Carina of prothorax dorsally strongly angulate three times and raised in the middle of the sides to a stout tubercle . . . . Genus No. XIII.
Carina of prothorax more evenly curved . . . . . Genus No. XIV.
p. Rostrum without distinct mesial carina . . . . . Genus No. XVII.
Rostrum with distinct mesial carina; eyes almost touching one another . . . . . Genus No. XV.
Rostrum with distinct mesial carina; eyes separate . . . . . Genus No. XVI.
q. Third segment of antenna longer than first and second together . Genus No. X.
Third segment of antenna shorter than first and second together . *r*.
r. Carina of prothorax basal . . . . . Genus No. VIII.
Carina of prothorax distant from base; eye coarsely granulated . Genus No. VI.
Carina of prothorax distant from base; eye finely granulated . . Genus No. VII.
s. Antenna reaching beyond base of elytra . . . . . *t*.
Antenna not reaching beyond base of elytra . . . . . *u*.
t. Sinus of eye very deep; antenna without long bristles . . . . Genus No. XXXIV.
Sinus of eye small; antenna with long bristles; carina of prothorax basal . . . . . Genus No. XXV.
As before, but carina of prothorax not basal . . . . . Genus No. XXIV.
u. Carina of prothorax separate from base . . . . . *v*.
Carina of prothorax basal, following the curvature of the basal edge of the elytra . . . . . *w*.
v. Apex of rostrum strongly marginate, prothorax only a little narrower at base than at carina . . . . . Genus No. XXVI.
Apex of rostrum not distinctly marginate; prothorax much narrower at base than at carina, the latter projecting; anal segment truncate and pygidium twice as long as broad . . . Genus No. XXVIII.
As before; anal segment not truncate; carina very strongly curved, almost basal in middle . . . . . Genus No. XXVII.
As before; anal segment not truncate; carina less strongly curved. Genus No. XXIX.
w. Carina of prothorax rounded in middle, elytra emarginate together at base . . . . . *x*.
Carina of prothorax forming an obtuse but distinct angle, basal margins of each elytron rounded . . . . . Genus No. XXXI.
x. Rostrum somewhat widened at apex; carina of prothorax projecting . . . . . Genus No. XXX.
Rostrum gradually narrowed from base to apex; carina of prothorax not projecting . . . . . *y*.
y. Pronotum broader than long . . . . . Genus No. XXXII.
Pronotum longer than broad . . . . . Genus No. XXXIII.

B. Antennal groove dorsal, open: ANOCERINÆ.

a'. Eyes vertical, somewhat approaching each other above, the frons being narrower posteriorly than anteriorly . . . . . *b'*.
Eyes not vertical, frons widest behind . . . . . *c'*.

b'. Sides of prothorax sulcate beneath the lateral carina	Genus No. XXXIX.
Sides of prothorax not sulcate beneath the lateral carina . . .	Genus No. XL.
c'. Carina of prothorax distant from base	Genus No. XXXV.
Carina of prothorax basal	*d'*.
d'. Globular, glossy black	Genus No. XXXVIII.
Not globular and glossy black; carina of prothorax extending to apex	Genus No. XXXVI.
As before; carina of prothorax not extending to apex	Genus No. XXXVII.

A. Subfam. *PLEUROCERINÆ.*

I. PTYCHODERES.

Macrocephalus, Olivier (*nec* Swederus, 1787), Enc. Méth. iv. Ins. p. 36 (1789) (partim).
Anthribus, subgen. *Ptychoderes,* Schoenherr, Curc. Disp. Meth. p. 34 (1826) (type: *elongatus*).
Ptychoderes, Schoenherr, Gen. Spec. Curc. i. p. 120 (1833); Jekel, Ins. Saund. i. p. 41 (1855); Lac. Gen. Col. vii. p. 488 (1866) (partim).

Range: South and Central America, Cuba.

♂ ♀. The rostrum bears three heavy carinæ on the upperside, the mesial one being prolonged over the frons. There are two deep longitudinal grooves laterally between the eye and antenna. The frons bears, besides the mesial carina, on each side a short but thin carina. The first segment of the fore tarsus is very little longer than the second.

The antennæ are generally longer in the males than in the females, reaching often beyond the apex of the elytra, but the difference is sometimes not very great, small males having often short antennæ. Such small specimens are recognizable as males by the fifth abdominal segment, which is shorter than the fourth in the males and longer than the fourth in the females. In some species there is, moreover, a sex-mark on the abdomen situated on the first segment. This mark is an elliptical or nearly circular shallow groove bordered by a slightly raised rim and filled in with a short velvety pubescence. The mark does not occur in American forms outside the genus, but reappears in the Oriental Fauna, being found in *Phlœopemon orientalis,* Lac. (1866), a species originally described as a *Ptychoderes*, but representing a distinct genus.

The species of *Ptychoderes* can be conveniently separated into two groups:—

I. Pronotum not rugate outside the central depression; prosternum finely punctured in middle, the groove in front of each anterior coxa shallow and narrow, often only vestigial, the two grooves not connected with one another across the intercoxal process.—Here belong *P. tricostifrons,* Fåhr. (1839), from Central America, and the South-American *nebulosus,* Oliv. (1795), *elongatus,* Germ. (1824), *columbianus,* Jek. (1855), *antiquus,* Jek. (1855), and *affinis,* Jord. (1894). The last two species have the elytra strongly convex behind, the elytra being devoid of the subapical tubercle found in the other members of this group. I doubt very much that those species with elytral tubercles are really specifically distinct from one another.

II. Pronotum rugate also outside the central depression; prosternum coarsely punctured; antecoxal grooves deep and connected with one another, often merged together into one large transverse groove.—Here fall all the other species of the genus, viz., *viridanus,* Boh. (1833), *brevis,* Jord. (1894), *longicollis,* Jord. (1894), *obsoletus,* Jek. (1855), *virgatus,* Fåhr. (1839), *mixtus,* Jek. (1855), *bivittatus,* Jord. (1894), *rugicollis,* Jord. (1895), *callosus,* Jek.

(1855), and *depressus*, Jek. (1855). Two of these forms are confined to Central America (*bivittatus* and *rugicollis*), while one (*mixtus*) ranges from Southern Brazil northward to Nicaragua.

Key to the Central-American Species.

Pronotum with a clayish-white vitta on each side . . . . . Species No. 4.
Pronotum with a sharply defined nearly pure white mesial vitta extending to apical declivity of elytra, being constricted in the middle of the latter; pronotum rugate all over . . . . . Species No. 2.
As before, but the mesial vitta less contrasting with the sides; antecoxal groove of prosternum broad, almost straight, not angulate in middle . . . . . Species No. 3.
Pronotum rugate only in the depression . . . . . Species No. 1.

1. **Ptychoderes tricostifrons.** (Tab. X. figg. 1, 1 *a*.)

Ptychoderes tricostifrons, Fåhr. in Schoenh. Gen. Spec. Curc. v. p. 158. n. 4 (1839) [1]; Jekel, Ins. Saund. i. p. 53 (1855) [2].

Hab. Mexico [1], Toxpam (*Sallé*), Bobo (*Höge*), Mochitlan in Guerrero (*Baron*), Ventanas in Durango (*Forrer*), Temax in N. Yucatan (*Gaumer*); British Honduras, Rio Sarstoon (*Blancaneaux*); Guatemala, Chacoj in Vera Paz, El Tumbador, Las Mercedes, El Reposo, Cerro Zunil, Volcan de Atitlan, Pantaleon, Zapote, Mirandilla, Rio Maria Linda (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Costa Rica, Bebedero (*Underwood, in Mus. Tring*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

This species is as common in Central America as *P. elongatus* is in Brazil. The series examined shows great individual variation in length, the smallest example measuring 7 millim. and the largest 22 millim., head excluded. The width of the specimens is also not constant, a difference in the proportional length of the prothorax being especially noteworthy. Bright-coloured individuals resemble *P. rugicollis*, but are easily distinguished from that species by the structure of the pronotum.

2. **Ptychoderes rugicollis.** (Tab. X. figg. 2, 2 *a*.)

Ptychoderes rugicollis, Jordan, Stett. ent. Zeit. lvi. p. 122. n. 1 (1895) [1].

The sex-mark on the first abdominal segment of the ♂ is different in position from that of *P. tricostifrons*, being situated much nearer the base of the segment in the present insect.

Hab. Mexico, Toxpam (*Sallé*), Bobo (*Höge*); Guatemala, Zapote, El Reposo (*Champion*); Nicaragua, Chontales [1] (*Belt*, *Janson*, *Richardson*); Costa Rica, Zarzero (*Schild-Burgdorf, in Mus. Tring*); Panama, Bugaba, Volcan de Chiriqui [1] (*Champion*).

3. **Ptychoderes mixtus.** (Tab. X. fig. 3.)

Ptychoderes mixtus, Jekel, Ins. Saund. i. p. 57 (1855) [1]; Gemm. & Har. Cat. Col. ix. p. 2722 (1872) [2].

Ptychoderes variicornis, Jekel, l. c. [3].

The antecoxal impression of the prosternum is broad and almost straight, not ⌒-shaped as in *P. rugicollis*. The ♂-mark on the first abdominal segment is very small and placed close to the apical edge.

Hab. COSTA RICA, Irazu (*Rogers*); PANAMA, Volcan de Chiriqui (*Champion*).—VENEZUELA; GUIANA; BRAZIL [1], Rio Negro [1], Goyas, Sta. Catherina.

This insect is apparently rare in Central America, only three specimens being contained in the collection.

4. **Ptychoderes bivittatus.** (Tab. X. fig. 4.)

Ptychoderes bivittatus, Jordan, Nov. Zool. i. p. 594. n. 5 (1894) [1].

The most distinct species of the genus, as regards coloration. The luteous white lateral vittæ of the pronotum, which extend to the tip of the rostrum, are united on the latter into a single broad vitta, leaving the middle of the head brown. The central part of the pronotum is often shaded with white or luteous, excepting a trilobate brown posterior patch, which is occasionally reduced to two oblique brown streaks. While each elytron bears a conspicuous tubercle before the apex in the three preceding species, the apices are simply rounded-declivous in *P. vittatus*. There is no ♂-mark on the first abdominal segment.

Hab. MEXICO [1], Jalapa, Bobo (*Höge*), Toxpam (*Sallé*); GUATEMALA, Panzos in Vera Paz (*Champion*); NICARAGUA [1], Chontales [1] (*Belt*, *Janson*).

II. HYPSELOTROPIS.

Ptychoderes, Schoenherr, Gen. Spec. Curc. i. p. 120 (1833) (partim); Lacord. Gen. Col. vii. p. 488 (1866) (partim).

Hypselotropis, Jekel, Ins. Saund. i. p. 65 (1855) (type: *annulicornis*); Jord. Stett. ent. Zeit. lvi. p. 124 (1895).

Range: South and Central America.

♂ ♀. The rostrum is narrower and more cylindrical between the eyes and antennæ than in *Ptychoderes*, and the lateral dorsal carinæ are rather more lateral. The antennal groove, too, is shorter, the posterior half of the groove being more or less obsolete. There are no thin carinæ on the frons between the mesial one and the eyes. The lateral carina connecting the antebasal carina of the pronotum with the basal edge of the prothorax is vestigial or absent. The legs are slender, especially the tarsi, the first anterior tarsal segment being always obviously longer than the second.

Of the five species known, only one occurs in Central America.

1. **Hypselotropis albatus.** (Tab. X. fig. 6.)

Hypselotropis albatus, Jordan, Stett. ent. Zeit. lvi. p. 125. n. 5 (1895) [1].

Hab. NICARAGUA, Chontales (*Janson*); COSTA RICA, Bebedero [1] (*Mus. Tring*); PANAMA, Volcan de Chiriqui (*Champion*).

There are only two females in the collection, which are fortunately in good condition, the species having been originally described from a somewhat abraded male. The femora and tibiæ of these females are reddish, as in the type.

III. ISCHNOCERUS.

Ischnocerus, Schoenherr, Gen. Spec. Curc. v. p. 191 (1839) (type: *infuscatus*); Lac. Gen. Col. vii. p. 505 (1866).

Meconemus, Labram and Imhoff, Gen. Curc. i. no. 40 (1842) (type: *tuberculatus*=*infuscatus*).

Range: South and Central America.

♂ ♀. Rostrum more or less cylindrical, widened at apex, with a mesial carina on the upperside continued over the frons. Eye coarsely granulated, lateral, more or less distinctly longer than broad. Antenna very thin, with a broad club of three segments, 9 triangular, 10 transverse. Antebasal carina of pronotum distant from base, flexed forward in an obtuse angle at the side, the lateral portion very oblique, not longitudinal, more or less curved, the posterior side being concave; sub-basal carina thin, sometimes vestigial; no basal lateral longitudinal carina.

There is no other genus in the American fauna with which the present one could be confounded, except *Dinocentrus*, from Chili, which differs only slightly from *Ischnocerus*, the antenna in the former being thicker, the antebasal carina of the prothorax more distant from the base, and the sub-basal carina having vanished altogether. The Ethiopian species which stand under *Ischnocerus* in the Munich Catalogue have no distinct mesial carina on the rostrum, their underlip is not quite so deeply divided as in the American insects, the eye is more finely granulated, and the antenna is less slender, the third segment, moreover, being obviously longer than the others.

Four species are known from Central or South America, and five more are added here.

a. Eye oblong; elytron with tubercles and tufts . . . . . *b.*
Eye oblong; elytron with black patch in middle of disc, no distinct tubercles . . . . . Species No. 6.
Eye practically round; a white mesial line on head and pronotum . . Species No. 7.

b. Longitudinal axis of eye shorter than the distance of eye from antenna, the rostrum being long, at least in the males; anterior edge of pronotum produced into a small but distinct tooth behind each eye . *c.*
Distance of eye from antenna not surpassing length of eye; anterior edge of pronotum without tooth . . . . . *d.*

c. Carina of prothorax not interrupted in middle (or very narrowly) . . Species No. 1.
Carina of prothorax rather widely interrupted in middle . . . . . Species No. 2.

d. Pronotum not distinctly impressed on disc, with small mesial tuft . . Species No. 5.
Pronotum distinctly impressed on disc, with large mesial tubercle, sides of impression also raised . . . . . *e.*

e. Third interspace of elytron with four tubercles . . . . . *f.*
Third interspace of elytron with five tubercles, the second of which is small . . . . . [*ænescens,* Jord. (1895); Paraguay and Brazil.]

f. Third tubercle of third interspace of elytron only a little wider than the third interspace is before it . . . . . Species No. 3.
This tubercle twice as broad as the third interspace is before it, the third and fourth stripes of punctures curving laterad at the tubercle; derm of elytra strongly metallic . . . . . Species No. 4.

1. **Ischnocerus infuscatus.**

Ischnocerus infuscatus, Fåhr. in Schoenh. Gen. Spec. Curc. v. p. 192. n. 1 (1839) [1]; Gemm. & Har. Cat. Col. ix. p. 2726 (1872) [2].

Anthribus tenuicornis, Fåhr. l. c.[3] (Dupont in litt., ex Dejean, nom. nud.).

Meconemus tuberculatus, Labr. & Imh. Gen. Curc. i. no. 40 (1842) [4].

Ischnocerus tuberculatus, Gemm. & Har. l. c.[5].

The figure of *I. tuberculatus* agrees with the present insect, which is the only one common in Mexico.

The individuals from Guatemala, Nicaragua, Costa Rica, and Panama differ from those before me from Honduras, Yucatan, and Mexico proper in having the carina of the pronotum more strongly angulate in the middle, the disc of the pronotum and the sutural area of the elytra more depressed, the apex of the latter rather more suddenly declivous, the second interspace wider than the first between the anteapical tubercles, and the posterior tufts more or less tawny. These differences are, however, by no means constant.

Hab. Mexico [1], Toxpam, San Andres Tuxtla (*Sallé*), Acapulco, Almolonga, Jalapa, Cerro de Plumas, Cordova, Oaxaca (*Höge*), Temax in N. Yucatan (*Gaumer*); British Honduras, Belize, Rio Hondo, Rio Sarstoon (*Blancaneaux*); Guatemala, Yzabal (*Sallé*), Panzos, Teleman, Chacoj, San Juan, and San Gerónimo in Vera Paz, El Reposo, Las Mercedes (*Champion*); Honduras, San Pedro Sula (*Wittkugel*); Nicaragua, Chontales (*Belt, Janson*); Costa Rica (*Mus. Tring*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

2. **Ischnocerus impressicollis.** (Tab. X. figg. 5, 5 *a*.)

Ischnocerus impressicollis, Jordan, Stett. ent. Zeit. lvii. p. 373. n. 7 (1896) [1].

Only one specimen of this insect is known. It differs from all individuals of the preceding species in having the sides of the disc of the pronotum more strongly raised, the carina rather widely interrupted, the sutural area of the elytra less depressed, the rostrum, the middle of the pronotum, the tip of the elytra, and the pygidium clothed with a purer white pubescence, &c.

Hab. Mexico, Cuernavaca [1] (*ex coll. Boucard, in Mus. Tring*).

3. **Ischnocerus consors,** sp. n. (Tab. X. figg. 7, 7 *a*.)

♂. Close to *I. œnescens,* Jord. (1895). Rostrum narrower; antennal groove rather larger; pronotum more strongly narrowed from carina to apex, with a white mesial line from the tubercle to apex, sides of disc less elevate; elytra with four (instead of five) tubercles in the third interspace, basal tubercle somewhat narrower and shorter than in *I. œnescens*, the second halfway between the first and third, the latter standing just before the apical declivity, a very little broader than the third interspace is in the middle, fifth interspace also with four tubercles, the first standing about midway between the first and second of the third interspace, the second midway between the second and third of that interspace, the other two a little further back than the respective tubercles of the third space.

Length 5 millim.*

Hab. Panama, Caldera in Chiriqui (*Champion*).

One male.

* In measuring the length the head is excluded.

4. **Ischnocerus metallicus,** sp. n. (Tab. X. fig. 8.)

♂ ♀. Upperside clothed with an almost uniformly cinnamon pubescence, underside slightly more whitish, pubescence of tubercles partly brown, especially on anterior side of the same; derm of elytra metallic bluish-green.

Rostrum short, not longer than apically broad, somewhat flattened, longitudinally rugate. Pronotum coarsely and rugosely punctured, with a discal impression divided by a mesial elevation raised to a black-pencilled median tubercle; carina not angulate in middle, curved obliquely forward at sides, the sublateral portion slightly flexuose, not forming a distinct angle with the dorsal carina. Elytra with rows of very large punctures; four tubercles in third interspace, first very large, high, not divided, extending from the scutellar row of punctures to the fourth row, second larger than in the allied species, conical, the third interspace here widened, third tubercle rather farther away from apex than usual in this genus, large and high, the third interspace being here widened and the others correspondingly constricted, the fourth tubercle smaller than the second; fifth interspace with three tubercles, the first small, standing behind the large basal one, the second also small, placed in front of the third interspace, the third subapical, larger than the corresponding one of the third space, at the side of which tubercle it stands; seventh interspace cariniform or tuberculate in front of apical declivity: these tubercles not so strongly tufted as in *I. infuscatus*.

Length 4–7 millim.

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba [type], Volcan de Chiriqui (*Champion*).

A small series.

5. **Ischnocerus championi,** sp. n. (Tab. X. fig. 9.)

♂ ♀. Upperside clay-colour, underside slightly more grey; tip of pronotal tubercle and frontal sides of elytral tubercles blackish-brown, sutural interspace and alternate lateral ones more or less tessellated with blackish-brown, partly greyish, or all the alternate spaces greyer than the others; pronotum with three irregular more densely pubescent lines.

Rostrum short, a little narrower than in *I. metallicus*. Pronotum hardly with a trace of an impression, rugate-subpunctate, sides somewhat rounded before middle; carina nearly straight above, oblique, lateral portion also nearly straight, forming an obtuse angle with the dorsal carina, the tip of the angle rounded off. Elytra punctate-striate, the stripes of punctures distinctly impressed, sutural area not depressed on back, only feebly so on apical declivity. the elytra being much more evenly convex than in all the preceding species; basal tubercle extending from scutellar row of punctures to third stripe, divided at the second stripe, third interspace with two more tubercles, one before middle, the other before apical declivity, both small, besides a vestigial subapical tubercle; fifth interspace with four small black or brown tubercles or traces of them; seventh and ninth interspaces subtuberculate before apex.

Length $5\frac{1}{2}$ millim.

Hab. BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, Las Mercedes, Pantaleon, Zapote [type] (*Champion*), Panzos in Vera Paz (*Conradt*); PANAMA, Caldera (*Champion*).

6. **Ischnocerus griseatus,** sp. n. (Tab. X. fig. 10.)

♂ ♀. Pubescence creamy-buff; a patch in the middle of each elytron black, occupying the third, fourth, and fifth interspaces, some specks behind it also black; shaft of antenna and the legs slightly rufescent, much darker than in the other species of the genus.

No tubercles on the thorax and elytra. Rostrum short. Eye less oblong than in the allied forms. Pronotum not impressed, sides hardly rounded between carina and apex; carina straight above, flexed forward laterally, with the angle strongly rounded. Elytra slightly depressed at suture, more so than in

I. championi, with rows of large punctures, the basal tubercle of the other species represented by a broad but slightly elevate callosity. Sub-basal mesial tubercle of pygidium conspicuous.

Length 5½ millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

Five specimens.

7. **Ischnocerus vittiger,** sp. n. (Tab. X. fig. 11.)

♀. Pubescence clay-colour above, grey below and in the alternate elytral interspaces, which are chequered with black; a mesial vitta on head and pronotum, the scutellum, apex of elytra, pygidium and eighth antennal segment, and base of first tarsal one, white or luteous-white; antennæ black, bases of segments 2–7 brown or rufous; bases of femora and basal two-thirds of tibiæ rufous, apex of tibiæ and the tarsi (except base of first segment) black, the two colours rather strongly contrasting.

Rostrum nearly half as long again as apically broad, more cylindrical than in the other species of the genus, less flattened laterally on the upperside, strongly dilated at apex, almost constricted behind the antennæ, very strongly punctured at the sides, which are naked, without carinæ here or longitudinal grooves. Eye almost round. Pronotum impressed on disc, the impression not deep, divided by a moderately elevate mesial ridge, which does not bear a distinct tubercle; carina curved from side to side, somewhat flexuose. Elytra deplanate at suture, strongly declivous at apex, with black-tufted tubercles—three in the third interspace, one in the fifth, with two small additional tufts in these interspaces and traces of subapical tubercles in the seventh and ninth interspaces. Pygidium depressed at apex. Mesosternal process slanting, not impressed.

Length 6 millim.

Hab. MEXICO, Juquila (*Sallé*).

Two females.

IV. DISCOTENES.

Discotenes, Labram and Imhoff, Gen. Curc. i. no. 49 (1842) (type: *cælebs*); Lac. Gen. Col. vii. p. 502 (1866); Gemm. & Har. Cat. Col. ix. p. 2726 (1872).

Phanosolena, Schaeffer, Journ. N. York Ent. Soc. 1904, p. 234 (type: *nigrotuberculata*).

Range: South and Central America, Texas.

♂ ♀. Antennal groove open, large, lateral, subdorsal in ♂. Eye lateral. Antenna with the third segment as long as, or a little shorter than, the fourth; shaft slender, segments incrassate at the tip in ♂; club consisting of four segments, flat, segment 8 longer than the others, especially in ♂, 9, 10, and 11 short. Antebasal carina of pronotum almost evenly curved, not angulate laterally. False mentum separated from gula by a transverse depression.

Three species are known, two from South America and one from Texas. Five from Central America are now added:—

a. Pronotum with mesial tuft . . . . . *e.*
Pronotum without mesial tuft . . . . . *b.*

b. Pronotum with a longitudinal impression on disc divided by a mesial carina; rostrum carinate above . . . . . *d.*
Pronotum not impressed on disc; rostrum without conspicuous carina . . . *c.*

c. Lateral portion of antebasal carina of pronotum evenly curved . . . . . Species No. 3.
This portion curved forward and then again slightly downward; elytron with a large black median patch extending from near the suture to the side. Here

belong the two South-American species, *D. cœlebs*, L. & I. (1842), from Brazil, and *D. consors*, Jord. (1904), from Peru.

d. Pubescence clay-colour; tibiæ with brownish postmedian ring or spot . . . Species No. 1.
Pubescence whitish-grey; tibiæ without brownish ring . . . . . Species No. 2.

e. A large tubercle before apical declivity of elytron . . . . . Species No. 4.
This tubercle absent or vestigial . . . . . Species No. 5.

1. **Discotenes lutosus**, sp. n. (Tab. X. figg. 12, 12 *a*.)

♂ ♀. Black; antenna (except club) and legs more or less rufous; pubescence clay-colour, slightly variegated with greyish-white; alternate interspaces of elytra tessellated with grey-white and brown-black, especially the suture; pygidium and apex of elytra densely pubescent, rather conspicuously spotted with white; sides of head and prothorax nearly naked, the latter irregularly spotted and streaked with clay-coloured pubescence; a black dot in the third interspace of the elytra, situated in the middle, and another in the fifth, standing a little behind the former, somewhat enlarged, forming a rather conspicuous patch, behind them several other conspicuous dots; a ring beyond the middle of each tibia and another near the base, as well as the tips of the tarsal segments, brownish.

Rostrum half as long again as apically broad in ♂, a little longer than broad in ♀, with a distinct mesial carina situated in a very shallow longitudinal depression; between this carina and antennal groove a thin longitudinal wrinkle visible under the dense pubescence. Antennal groove large, but not close to the eye, the distance, which is larger in the ♂ than in the ♀, being about one-third the greatest width of the eye. The latter somewhat oblong, faintly oblique, the direction of the longest diameter crossing rostrum. Eighth antennal segment of ♀ little over twice as long as broad; club in this sex very broad; eleventh segment of ♂ longer than broad, apex truncate.

Pronotum deeply impressed from carina to near apex, the impression divided by a mesial ridge; sides of impression elevated behind middle. Elytra depressed at suture, alternate interspaces somewhat elevate, especially before apex, where the third and fifth interspaces form a double tubercle; each elytron slightly tubercled at the apical sutural angle, the declivous apex therefore appearing somewhat impressed transversely; basal callosity rounded, not crested with a tuft, black median spot elevate.

Length 5–8 millim.

Hab. Mexico, Juquila, Toxpam (*Sallé*).

Four males, two females.

2. **Discotenes imitans**, sp. n. (Tab. X. fig. 13.)

♂ ♀. In colour closely resembling *Ischnocerus griseatus* (p. 307). Black; shaft of antenna and legs rufescent; pubescence grey or clay-colour, not dense, the specimens appearing speckled; elytra somewhat variegated with brown, a spot in the middle of each black, extending from the fifth row of punctures to the second or to the suture; tibiæ not ringed.

Rostrum shorter than in *D. lutosus*, especially in the ♀, in which it is rather broader at the apex than long; a conspicuous mesial carina and two thin wrinkles as in *D. lutosus*. Eye a little shorter than in the preceding species, faintly truncate anteriorly, the direction of the longest axis across the rostrum. Eighth antennal segment of ♀ about twice as long as apically broad, shorter than the seventh, club broad; eleventh segment of ♂ apically truncate-sinuate, with the angles more or less produced.

Prothorax with a divided impression on disc as in *D. lutosus*, but the impression more shallow. Elytra depressed at suture, the alternate interspace very little more convex than the others, except the third, which forms a slight tubercle before the apex; basal callosity very low.

Length 7 millim.

Hab. Guatemala, Las Mercedes, Cerro Zunil (*Champion*).

Two males, four females.

3. **Discotenes cylindratus,** sp. n. (Tab. X. fig. 14.)

♂ ♀. A small species, resembling in colour *Ischnocerus championi* (p. 307). Black, rufescent; antenna black, or the shaft rufous; legs rufous or rufescent, apex of tibiæ and tarsi (except the base of the first segment) black, or, in pale specimens, brunnescent; pubescence grey beneath, clayish-grey above, not dense, variegated with brown on the upperside, suture and alternate interspaces of elytra whitish, dotted with brown or black, the dots often confluent in streaks, a dot in the middle of the third interspace mostly somewhat enlarged, often extended to the suture and to the fifth stripe of punctures.

Rostrum broader than long, appearing slightly depressed mesially in ♂ on account of the elevate upper edge of the large antennal grooves, flat in ♀; no distinct mesial carina. Antennal groove close to eye, but not touching it. Eye slightly transverse, the longest axis crossing occiput, not rostrum. Eighth antennal segment of ♀ about four times as long as broad; last segment of ♂ not longer than broad, irregularly rounded; eighth segment proportionally narrower than in the preceding species.

Prothorax as broad as long, rounded at the sides, not impressed on disc; a thin mesial line densely pubescent in good specimens. Elytra cylindrical, hardly depressed at the suture, distinctly punctate-striate, the striæ all impressed, all the interspaces being a little convex; no tubercles; basal callosity vestigial.

Fore tarsus longer than in the preceding species, especially in the ♂, the first segment being longer than half the tibia in both sexes. Abdominal segments 1, 2, and 3 of ♂ with a small, acute, mesial tubercle at apical edges.

Length $4\frac{1}{2}$ millim.

Hab. Mexico, Toxpam, Juquila (*Sallé*); Guatemala, San Gerónimo [type] and Tamahu in Vera Paz (*Champion*), La Tinta and Tucuru in Vera Paz (*Conradt*).

4. **Discotenes picticollis,** sp. n. (Tab. X. figg. 15, 15 *a*.)

♂ ♀. Blackish-brown, rufescent; shaft of antenna and the legs rufous, middle of femora, three rings on tibiæ, and apices of tarsal segments more or less deep brown; pubescence beneath grey, above luteous or grey variegated with brown, black, and white; head and rostrum with an anteriorly forked grey-white line; pronotum with a grey-white mesial line in front and a luteous one behind, central tuft blackish, four black oblique spots, two apical and two basal, bordered with luteous or grey; scutellum white; suture of elytra and alternate interstices dotted with brown (or black) and grey, third interspace whitish-grey between the three tubercles, a transverse curved mark before apex of each elytron black, sutural angle greyish-white, tufts of tubercles brown or black, partly tawny; pygidium with the mesial line and sides grey; base of first tarsal segment slightly brownish.

Rostrum short, broader than long, hardly dilated apically, depressed, mesially impressed, with a very thin carina in the impression. Antennal groove large, close to eye, but not touching it. Eye as in *D. cylindratus*. Club of antenna elongate; eighth segment of ♀ as long as seventh, at least four times as long as apically wide, eleventh rounded in both sexes, not longer than broad.

Prothorax as broad as long, almost evenly rounded at the sides in dorsal view, but being widest a little behind middle; a conspicuous mesial tubercle, with an oblique impression at each side, the impressions merged together into a deeper one in front of the carina. Elytra oblong, somewhat depressed, punctate-striate, each with three tubercles in the third interspace—one at base and another before subvertical apex high, the third in middle between them small, all tufted; the elytra transversely depressed behind the first tubercle. First fore tarsal segment rather less than half the length of the tibia.

Length 4 millim.

Hab. Guatemala, San Gerónimo, Cerro Zunil, Volcan de Atitlan (*Champion*); Panama, Bugaba [type] (*Champion*).

A series.

5. **Discotenes affinis,** sp. n. (Tab. X. fig. 16.)

♂ ♀. Closely allied to the preceding insect, but differs in the following characters:—Markings of head and pronotum less distinct, line of head and rostrum not forked; rostrum more flat above; prothorax less rounded at the sides, widest at the carina, mesial tubercles less high, impression less distinct; basal tubercle of elytron not so high, median and anteapical ones vestigial, indicated by little more than spots of black erect pubescence; pygidium almost or entirely grey.

Length 4 millim.

Hab. Mexico, Juquila (*Höge*); Guatemala, Capetillo [type], Calderas, Cerro Zunil (*Champion*).

Four specimens only, which vary somewhat in the size of the elytral tubercles, these being less developed in the two females than in the two males.

V. EUCYCLOTROPIS.

Eucyclotropis, Jordan, Nov. Zool. xi. p. 273 (1904) (type: *pustulata,* from Brazil).

Range: South and Central America.

♂ ♀. Rostrum short, stout, broader than long, flattened above, with nearly straight sides. Antennal groove open. Antennæ not prolonged in ♂; the three segments of the club closely applied to each other. Eye lateral, entire, sometimes truncate anteriorly. Carina of pronotum almost evenly curved from side to side. Prosternum very short.

The five species known to me (inclusive of the two new ones described below) exhibit considerable divergence in the development of the antennæ and other parts, and will probably be separated into two genera when more species are found. However, the genus as it stands can easily be recognized by the short rostrum with the uncovered antennal groove, the lateral, entire eye, the three-segmented antennal club, and the evenly curved prothoracic carina. Its nearest ally among the Central-American genera is *Discotenes.*

a. Prothorax with mesial tuft, elytron tuberculate . . . . [*pustulata,* Jord. (1904); Brazil.]
Prothorax without mesial tuft, elytron regularly striped with grey; third antennal segment much shorter than second and also shorter than the fourth . . . . . [*striata,* Jord. (1904); Bahia.]
Prothorax without mesial tuft; third segment of antenna longer than second . *b.*
b. Side of prothorax carinate from antebasal carina to apex . . . . . Species No. 1.
Prothorax cylindrical in anterior half . . . . . *c.*
c. Elytron with broad and high basal tubercle . . . . . Species No. 2.
Elytron without basal tubercle, the base strongly depressed . . . . . Species No. 3.

1. **Eucyclotropis pylades.** (Tab. X. fig. 17 *.)

♂. *Eucyclotropis pylades,* Jordan, Nov. Zool. xi. p. 274. n. 65 (1904) [1].

In the type, which is a ♂, the antennal segments 7–11 are missing. In the ♀ segments 7 and 8 are

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* The generic name is incorrectly written *Encyclotropis* on the Plate.

pubescent white, 8 is gradually dilated towards apex, being nearly as wide at apex as segment 9; the tibiæ are not hooked at apex in this sex.

Hab. Mexico, Sierra de Durango (*Mus. Tring*), Toxpam (*Sallé*); British Honduras (*Blancaneaux*).

Two females only.

2. **Eucyclotropis barynotus,** sp. n. (Tab. X. fig. 18.)

♀. Black, covered with a greyish clay-coloured pubescence above, dotted with black-brown in the sutural and alternate interspaces of the elytron; shaft of antenna and tarsi rufous, the latter and antennal segments 7 and 8 pubescent white; pubescence of underside sparse, in speckles.

Rostrum half as broad again as long, flat, feebly depressed transversely at base, with a naked mesial line. Frons densely rugulose. Eye somewhat oblique, direction of the long axis crossing rostrum. Antenna reaching to base of prothorax; segment 3 twice as long as 2, longer than 4, 8 hardly half as long again as apically broad, 10 twice as broad as long; 11 rufescent.

Prothorax strongly convex, a little wider at base than at apex, side rounded from carina to apex. Elytra truncate at base, not emarginate, shoulder-angles not projecting, sides parallel from base to beyond middle, then rounded; dorsum convex, suture not much depressed, alternate interspaces all somewhat convex, especially the third; a rounded prominent basal gibbosity.

Anterior coxæ not close together. Mesosternal process feebly tuberculate at apex. Intercoxal projection of first abdominal segment very broad, margined at sides. First fore tarsal segment a little longer than the fore tibia is broad near apex, shorter than the claw-segment.

Length 8 millim.

Hab. Mexico, Toxpam (*Sallé*).

One female.

3. **Eucyclotropis gibbosus,** sp. n. (Tab. X. figg. 19, 19 *a*.)

♂. Black, irrorated with clay-colour above, with grey beneath, legs more uniformly pubescent grey, elytron tessellated with black-brown.

Rostrum twice as broad as long, upperside flat, on a level with frons, densely rugulose like head. Eye round. Antenna reaching to base of elytron; segment 3 less than twice the length of 2, a little longer than 4; 8 more than twice as long as apically broad, very much narrower than 9; 11 a little broader than long, rounded.

Prothorax longer than broad, widest at carina, strongly convex, with indication of a central gibbosity. Elytra peculiar in shape, emarginate at base, gradually and strongly elevate from base to middle, then gradually rounded-declivous, appearing subglobular, apart from base; regularly punctate-striate, the interspaces slightly convex, alternate ones a little more raised and more obviously chequered brown and luteous. Fore and mid tibiæ with acute hook at apex.

Length $7\frac{1}{2}$ millim.

Hab. Guatemala, San Gerónimo (*Champion*).

One male.

VI. BREVIBARRA, gen. nov.

♂ ♀. Rostrum short, flat, feebly emarginate at apex, not spatulate, not carinate. Mandible obtuse at apex; labium shallowly emarginate, depressed; penultimate segment of maxillary palpus not longer than broad; lobes of false mentum obtuse. Antennal groove triangular, curved, its upper edge cariniform and nearly extending to eye. Antenna reaching the base of prothorax, bearing some moderately long

setæ on the distal segments: segments 1 and 2 incrassate, 3 as long as 2, 4 hardly shorter, 5–8 gradually decreasing in length, club loose; 9 triangular, a little longer than broad; 10 broader than long, semicircular or transverse; 11 a little shorter than 9, obtusely triangular. Eye coarsely granulate, lateral, oblique, semiemarginate. Frons feebly convex. Prothorax evenly convex, carina antebasal, at sides slightly flexed forward in an even curve, sub-basal carina distinct only at sides, longitudinal basal carina feebly marked. Elytra truncate at base, not emarginate, shoulder-angles rounded off. Mesosternal process very narrow, less than half the width of the coxa, rounded-truncate, feebly angulate laterally at apex. First tarsal segment about one-third the length of the tibia in ♀, a little longer than one-third in ♂.

Allied to *Barra*, Jordan, Nov. Zool. xi. p. 274 (1904).

Type: *B. scotosagis*, sp. n.

1. **Brevibarra scotosagis,** sp. n. (Tab. X. fig. 20.)

♂ ♀. Brownish-black, the light-pubescent parts rufescent. Head and pronotum very densely punctate-reticulate, slightly pubescent grey, the pronotum somewhat rugulose at sides.

Rostrum one-third broader than long. Antenna pale rufous, segments 1, 2, 9, and 10 brunnescent, 11 paler than the others.

Prothorax one-third broader than long, conical from carina, the side practically straight from carina to apex, a mesial spot before carina and a mesial dot behind it grey or yellowish-grey. Scutellum rounded, grey or yellowish. Elytra convex, not depressed along suture, cylindrical from base beyond middle, then evenly convex-declivous, very finely rugulose-granulate, seriate-punctate, the striæ feebly impressed, obsolescent behind; rather sparsely grey or yellowish-grey pubescent, somewhat tessellated, a transverse space across middle of suture black, not sharply defined laterally. Pygidium rounded, clothed with a mixture of grey and brown pubescence. Underside grey. Tibiæ brown on upperside, with a grey patch before middle; tarsi brown, first segment grey, except at tip.

Length $3\frac{1}{2}$ millim.

Hab. Panama, Bugaba (*Champion*).

One male, three females (type, ♀).

VII. BARRIDIA, gen. nov.

♀. Differs from *Brevibarra* as follows:—Rostrum slightly spatulate. Eye finely granulose. Antennal cavity larger, the space separating it from the buccal fissure narrower, canaliculate. Lobes of false mentum acute. Mandible more pointed, less robust. Antennal segment 7 subglobular; 8 twice as long as and much broader than 7, triangular; club not loose, 11 longer than 9. Elytra feebly emarginate together at base. Mesosternal process as broad as coxa, short, truncate, not angulate laterally.

Type: *B. corticina*, sp. n.

1. **Barridia corticina,** sp. n. (Tab. X. fig. 21.)

♀. Brownish-black, rufescent, sparsely pubescent grey beneath, variegated with luteous grey above.

Rostrum and head densely rugate-reticulate. Frons flat, like the rostrum, two-thirds the width of the latter. Upper lip pale luteous. Antenna rufous, end-segment pale luteous, 8, 9, and 10 brown, 3 a very little shorter than 4, much longer than 5.

Prothorax conical, moderately convex, longitudinally rugate-plicate, somewhat reticulate at sides, an indistinct mesial line and some lateral dots grey, carina nearly straight, only the extreme end flexed forward. Scutellum grey. Elytra feebly depressed along suture, subcylindrical from base beyond middle, punctate-striate, stripes feebly impressed, interspaces minutely coriaceous, alternate ones slightly dotted with grey,

sutural and lateral edges of elytra not rufescent. Legs brown, basal half of tibiæ and nearly the whole first tarsal segment rufous, pubescent-grey, claw also rufous.

Length $2\frac{1}{2}$ millim.

Hab. Guatemala, Dueñas (*Champion*).

One female.

VIII. PIEZOBARRA, gen. nov.

♀. Rostrum slightly spatulate, broader than long, feebly emarginate at apex; flat above, mesially carinate beneath. Frons three-fourths the width of the rostrum, flat. Eye rather coarsely granulose, lateral, slightly emarginate anteriorly. Under lip sinuate, the sinus not extending so far as to the insertion of the palpus; penultimate segment of maxillary palpus broader than long; false mentum deeply sinuate, lobes rounded; interspace between buccal fissure and antennal groove narrow, sublinear, sulcate. Antennal groove large, triangular, covered, not quite reaching to eye. Antenna reaching to base of elytron: segments 1 and 2 incrassate; 3 as long as 2, hardly longer than 4; 5–8 gradually a little decreasing in length; 8 slightly thicker than 7; club loose, but broad. Prothorax widest at base, conical; carina not quite basal, laterally curved forward to middle of sides. Base of each elytron convex. Mesosternal process as broad as coxa, rounded, not angulate. Fore leg rather longer than mid and hind legs; first fore tarsal segment about half the length of the tibia, that of mid and hind tarsi about one-third the length of the tibia; tooth of claw long, acute.

Type: *P. sparsilis*, sp. n.

In appearance similar to *Piezocorynus*, Schoenh. (1839), but differs in the form of the antenna, eye, rostrum, &c. Distinguished from *Barra*, *Brevibarra*, and *Barridia* by the practically basal position of the prothoracic carina and the ventrally carinate rostrum.

1. **Piezobarra sparsilis,** sp. n. (Tab. X. fig. 22.)

♀. Brownish-black, rather sparsely pubescent-grey beneath, variegated with luteous-grey above.

Rostrum and head rugate-reticulate, the meshes longitudinal on head. Antenna rufous-brown, segments 1–8 more or less pale rufous at base, 9 and 10 brown, 11 luteous; 9 triangular, a little longer than broad, 10 broader than long, 12 subcircular.

Prothorax half as broad again as long, very densely punctate-reticulate, transversely depressed before carina; angle of carina 90°, but apex rounded off, true basal angle of prothorax not projecting backwards; a variable spot before carina and several dots near apex and at sides luteous-grey. Scutellum grey. Elytra about twice as long as broad, depressed at basal margin, declivous from the slightly prominent sub-basal callosities, not impressed along suture, coarsely punctate-striate, a small patch at middle of basal margin, and a number of spots and speckles arranged in ill-defined transverse bands grey or luteous-grey, second interspace almost completely grey. Legs rufescent at the joints, base of tibiæ and of first tarsal segment dark rufous like the claw-segment.

Length $2\frac{1}{3}$ millim.

Hab. Guatemala, Cerro Zunil, San Juan in Vera Paz (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

Three females.

IX. LAGOPEZUS.

Anthribus, Fabricius, Syst. Eleuth. ii. p. 407 (1801) (partim).

Lagopezus, Schoenherr, Gen. Spec. Curc. v. p. 189 (1839) (type: *tenuicornis*); Lacord. Gen. Col. vii. p. 540 (1866); Gemm. & Har. Cat. Col. ix. p. 2736 (1872).

Range: South and Central America.

♂ ♀. Similar to the following genus (*Piezocorynus*), but the legs rough with a long pubescence, first tarsal segment shorter, second broader.

a. Pronotal carina angulate in middle, the angle pointing forwards . . . . . Species No. 2.
Pronotal carina not angulate in middle, or the angle pointing backwards . . *b*.
b. Suture of elytra dotted with black . . . . . Species No. 1.
Suture of elytra with one large spot before middle . . . . . Species No. 3.

1. **Lagopezus tenuicornis.**

Anthribus tenuicornis, Fabr. Syst. Eleuth. ii. p. 407 (1801) [1] : Schoenh. Gen. Spec. Curc. i. p. 182. n. 7 (1833) [2].

Lagopezus tenuicornis, Fåhr. in Schoenh. Gen. Spec. Curc. v. p. 190. n. 1 (1839) [3] ; Labr. & Imh. Gen. Curc. i. no. 51 (1842) [4] ; Lacord. Gen. Col. vii. p. 541 (1866) [5] ; Gemm. & Har. Cat. Col. ix. p. 2736 (1872) [6].

Hab. NICARAGUA, Chontales (*Belt*, *Janson*) ; PANAMA, Bugaba, Volcan de Chiriqui (*Champion*). — SOUTH AMERICA [1], Colombia [5], Cayenne [4 5 6], Peru [5], Upper Amazons, Pernambuco, Pará, Espiritu Santo (*Mus. Tring*).

Found in some numbers in Nicaragua and Panama.

2. **Lagopezus inversus,** sp. n. (Tab. X. fig. 23.)

♂. In colour similar to *L. tenuicornis*, Fabr. (1801), but the suture of elytra not tessellated. Proportionally shorter ; upperside more irregularly grooved ; frons broader ; tenth antennal segment more than twice as broad as long ; dorsal carina triflexuose, forming in middle an obtuse but very distinct angle which points forward ; basal callosity of elytron higher and more abrupt.
Length 6 millim.

Hab. GUATEMALA, Cubilguitz in Vera Paz (*Champion*).

One male.

3. **Lagopezus morio,** sp. n. (Tab. X. fig. 24.)

In general appearance not unlike *Piezocorynus tristis*, Jekel (1855).
♂ ♀. Black, covered with a greyish-black pubescence which is somewhat paler than in *L. tenuicornis*, with the following velvety-black markings : on pronotum two oblique apical lines converging anteriorly, a basal patch on each side more or less produced beyond carina ; on elytra a sutural streak from near base to middle, the suture dotted with black from this streak to apex ; antenna rufescent, last segment luteous. Rostrum shorter than in *L. tenuicornis* ; frons wider ; pronotum shorter, with the basal carina rather farther from the base in middle, the mesial vestigial callosity standing close to the carina, the side less incurved before basal angle, the lateral carina being much less flexed ; elytra shorter, interspaces more even, with traces of tubercles, which are more or less tipped with black, basal callosity higher than in *L. tenuicornis*, more abrupt at sutural side.
Length 5 millim.

Hab. PANAMA, Volcan de Chiriqui, Bugaba, Tolé (*Champion*).

Two males, one female.

X. PIEZOCORYNUS.

Euparius, Schoenherr, Gen. Spec. Curc. i. p. 140 (1833) (partim).
Piezocorynus, Schoenherr, loc. cit. v. p. 250 (1839) (type: *dispar*); Lacord. Gen. Col. vii. p. 581 (1866); Gemm. & Har. Cat. Col. ix. p. 2746 (1872); Lec. Proc. Amer. Philos. Soc. xv. p. 401 (1876); Lec. & Horn, Classif. Col. N. Am. 2nd edit. p. 529 (1883); Jord. Nov. Zool. xi. p. 276 (1904) (*Piezocorynus* = *Camptotropis*).
Camptotropis, Jekel, Ins. Saund. i. p. 136 (1855) (type: *gracilicornis*).

Range: America.

♂ ♀. Rostrum broader than long, flat, more or less quadrangular, often with mesial basal depression. Antennal groove lateral, foveiform, more or less covered. Eye coarsely granulated, oblique, either obliquely truncate in front or feebly sinuate beneath. Antenna longer in ♂ than in ♀, with single long bristles, especially on the club, the latter consisting of three segments, but the eighth segment being also often dilated, triangular. Carina of pronotum either distant from base in the middle and basal laterally, or nearly basal throughout, with intergradations.

In the ♂ the first three segments of the abdomen are more or less flattened and sometimes provided with a tubercle, either each of them or only the second. The mid tibia is occasionally armed with a thin apical spine. The length of the antenna is variable in the males of the same species.

a. Occiput with two sharply marked black velvety patches; fore tibia clay-colour . . . . . Species No. 6.
Occiput without these patches . . . . . *b*.
b. Sutural area of elytra blacker than sides . . . . . Species No. 3.
Sutural area of elytra more grey or ochraceous than sides or of the same colour . . . . . *c*.
c. A large ochraceous or greyish-ochraceous sutural area extending laterally at least to seventh stripe . . . . . *d*.
Ochraceous sutural area, if present, restricted to interspaces 1–4 . . . . . *e*.
d. Ochraceous sutural area truncate in front, basal fourth of elytra black . . . Species No. 1.
Ochraceous sutural area anteriorly oblique on each side, extending to near scutellum at suture . . . . . Species No. 2.
e. Second elytral interspace uniformly ochraceous from basal callosity to apical declivity . . . . . *f*.
This interspace not ochraceous . . . . . *h*.
f. Pronotum transversely plicate, the thin transverse ridges being more prominent than the ridges connecting them . . . . . Species No. 9.
Pronotum densely reticulate-punctate . . . . . *g*.
g. Fifth elytral interspace with one greyish-ochraceous streak at basal fourth . . Species No. 7.
This interspace with three greyish-ochraceous dots from basal fourth to apical third . . . . . Species No. 8.
h. First three abdominal segments with tubercle in middle (♂) . . . . . Species No. 4.
Second abdominal segment only with distinct tubercle (♂) . . . . . Species No. 5.

1. **Piezocorynus dimidiatus**, sp. n. (Tab. X. fig. 26.)

♂ ♀. Black; a large greyish-ochraceous patch occupying elytra from the slight basal callosity to near the apex, the area truncate in front, somewhat dotted with black; last antennal segment and third and fourth

tarsal segments luteous; antenna and legs more or less rufescent at the joints; head and pronotum sparsely irrorated with luteous, a mesial subapical spot on pronotum rather conspicuous; underside sparsely grey; tibiæ with a grey ring near base and another at apex; base of first tarsal segment, scutellum, and a dot before scutellum also grey.

Rostrum twice as broad as long, three times the width of the frons. Eye large, prominent. Club of antenna loose, segment 9 triangular, gradually widening, as long as, or a little longer than 8, 10 halfmoon-shaped, on a short stalk, 11 ovate, a little longer than wide. Pronotum slightly depressed behind; angle of carina less than 90°, lateral carina not extending beyond middle; side sinuate before basal angle. Elytra not depressed at suture, basal callosity feebly elevate, stripes rather deep.

Length $3\frac{1}{4}$ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

A small series. Nearest to *P. dorsalis*, Jord. (1904), from Brazil.

2. **Piezocorynus sellatus,** sp. n. (Tab. X. fig. 27.)

♀. Resembling *P. dorsalis*, Jord. (1904). Frons much broader; club of antenna almost twice as wide and the segments much closer together; side of pronotum more rounded, angle of carina not so acute, little less than 90°; a short white mesial stripe at apex of pronotum, continuous with a white occipital half-ring, which is open in front; ochraceous area of elytra subemarginate behind; third and fourth tarsal segments luteous.

Length $3\frac{1}{3}$ millim.

Hab. GUATEMALA, Las Mercedes (*Champion*).

One female.

3. **Piezocorynus lateralis,** sp. n. (Tab. X. fig. 28.)

♂ ♀. Similar to *P. alternans*, Jord. (1904), from Brazil. First five interspaces much blacker from base to apical declivity than rest of elytron. Club of antenna rather narrower than in *P. alternans*, eighth segment broader, tenth and eleventh more regularly rounded proximally, in ♀ eighth longer and tenth shorter than in ♀ *P. alternans*. Mid tibia of ♂ with thin sharp apical spur. Abdominal segments 1–3 impressed in ♂.

Length $4\frac{1}{3}$ millim.

Hab. MEXICO, Toxpam (*Sallé*); GUATEMALA, Pantaleon (*Champion*); PANAMA, Volcan de Chiriqui [type] (*Champion*).

Two males, one female.

4. **Piezocorynus homœus.** (Tab. X. fig. 29.)

Piezocorynus homœus, Jordan, Nov. Zool. xi. p. 279. n. 76 (1904) [1].

♂ only known. Similar to the North-American *P. mixtus*, Lec. (1876), and like that species provided in the ♂ with a tubercle on the first three abdominal segments. The rostrum is longer in *P. homœus*, the frons narrower, the antenna thicker, the club is more compact, the eighth segment being broad, triangular, as long as the ninth and tenth together, the ninth not longer than apically broad, the tenth at least twice as broad as long, the angle of the pronotal carina a little over 90° with the tip more strongly rounded off, the luteous spots of the upperside sparser, disc evenly convex.

Hab. PANAMA, Caldera, Bugaba (*Champion*).—BRAZIL, Goyaz [1].

Two specimens of this species were found in Panama.

5. **Piezocorynus atratus,** sp. n. (Tab. X. fig. 30.)

♂. Also close to *P. mixtus*, Lec. (1876). Upperside black, with small luteous-grey dots on the elytron and a few speckles of the same colour on head and pronotum; rufescent rings of legs much reduced, the tibiæ being practically black, with a subbasal and subapical grey ring. Antenna as thin as in *P. mixtus*; segment 8 slightly triangular, hardly two-thirds the length of 7; club not loose as in ♂ of *P. mixtus*, broader; 9 as long as 7, little longer than apically wide; 10 nearly three times as broad as long, 11 a little broader than long. Disc of pronotum distinctly bi-impressed, with the centre elevate. Second abdominal segment with acute tubercle. Mid tibia somewhat dilated ventrally at apex.

Length $4\frac{1}{3}$ millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

One male.

6. **Piezocorynus occipitalis,** sp. n. (Tab. XI. fig. 1.)

♂ ♀. Black; rostrum and head with a few luteous and grey scales, which are denser on frons; two large, rounded patches situated on occiput velvety-black; antenna rufescent, segments 9 and 10 brunnescent; pronotum with a few grey and luteous speckles, apical edge more or less rufescent; scutellum luteous-grey; sutural interspace of elytron ochraceous from near base to apical declivity, dotted with grey and black, or black dotted with grey; second interspace evenly ochraceous, third black, with one or two dots in front, one in middle and two behind, fourth interspace ochraceous only in front, this colour beginning at the hinder side of the basal callosity as in the other three spaces, fifth and seventh interspaces and lateral edge dotted with grey; meso- and metasternum denser grey, or luteous, at sides than rest of under surface; tibiæ and tarsi rufescent, pubescent-luteous, fore tibia unicolorous, mid and hind tibiæ with a small brown ring near base and a larger one beyond middle, apical half of first tarsal segment and the whole second (except extreme base) black.

Rostrum one-fourth broader than long, twice as broad as frons. Club of antenna loose; segment 9 triangular, gradually widening, 10 also triangular (♂) or more halfmoon-shaped (♀), 11 rotundate. Pronotum evenly convex, feebly depressed before carina; angle of carina less than 90°, lateral carina not reaching middle. Elytron similar to that of *P. plagifer*, Jord. (1904), and *P. dispar*, Gyll. (1833). Prosternum very densely covered with shallow punctures. Abdomen of ♂ feebly impressed in middle.

Length $6\frac{1}{2}$ millim.

Hab. GUATEMALA, Cerro Zunil, Las Mercedes, Volcan de Atitlan (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

A few specimens.

7. **Piezocorynus strigifer,** sp. n. (Tab. XI. fig. 2.)

♂. Similar to *P. occipitalis*, especially in the pattern of the elytra. Head and pronotum as prominently reticulate-punctate as in that species; no black patches on occiput. Antenna thicker; segment 8 elongate-triangular, two-thirds the length of 7, 9 a little longer than apically broad, 10 more than twice as wide as long, 11 also broader than long. Pronotum with short conspicuous apical mesial streak and a small lateral dot of a luteous-grey pubescence, angle of carina rounded off. Stripes of elytron deeper than in *P. occipitalis*. Underside sparsely, but evenly, pubescent-grey. Abdomen hardly depressed mesially. Legs black; a submedian and an apical narrow ring on tibiæ, basal half of first tarsal segment and the whole third and fourth segments rufous or rufescent, clothed with a luteous-grey pubescence.

Length $3\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba (*Champion*).

One male.

8. **Piezocorynus simplex,** sp. n. (Tab. XI. fig. 3.)

♂. Similar to the preceding. Rostrum shorter. Antennæ much thinner, segment 8 broader, 9 a little longer than 8, 10 hardly twice as broad as long. Pronotum with apical mesial streak as in the preceding species, disc visibly depressed on each side of the slightly raised mesial line, also more depressed before carina than in *P. strigifer*; carina very feebly concave in middle, lateral angle less rounded off than in *P. strigifer*. Alternate interspaces of elytron subcostate, first three interspaces nearly as in *P. strigifer*, fifth also dotted with luteous. First three abdominal segments flattened.

Length 3 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One male.

9. **Piezocorynus plagifer.** (Tab. X. figg. 25, 25 *a*.)

Piezocorynus dispar, Lec. (nec Gyllenhal, 1833), Proc. Amer. Philos. Soc. xv. p. 402. n. 1 (1876) [1].

Piezocorynus plagifer, Jordan, Nov. Zool. xi. p. 277. n. 71 (1904) [2].

Hab. North America, Missouri and Texas [1].—Guatemala, Cerro Zunil (*Champion*), Coban in Vera Paz (*Conradt*); Nicaragua, Chontales (*Belt*); Costa Rica [2]; Panama, Bugaba, Volcan de Chiriqui (*Champion*).—Brazil [2].

Now I have seen more specimens of *P. plagifer* I come to the conclusion that it may possibly intergrade with *P. dispar*, Gyll., being perhaps only a colour-variety of that insect.

Found in some numbers in Central America.

XI. ALLANDRUS.

Allandrus, Leconte, Proc. Amer. Philos. Soc. xv. p. 396 (1876) (type: *bifasciatus*); Jord. Nov. Zool. xi. p. 242 (1904).

Very close to *Enedreytes*, Schoenh. (1839).

Range: America.

1. **Allandrus angulatus,** sp. n. (Tab. XI. fig. 4.)

♂ ♀. Black, variegated with grey; antenna (except club), tibiæ, and tarsi more or less rufous. Rostrum flat, not carinate, densely rugate-punctate, about half as long again as apically broad. Eye elliptical. Prothorax rugate-punctate, with a luteous patch before scutellum; carina convex, angulate in middle, the point of the angle directed forwards. Scutellum luteous. Elytra broader than in *A. bifasciatus*, Lec., from North America, the grey pubescence a little denser before and behind, forming indistinct and irregular transverse bands.

Length $2\frac{1}{2}$ millim.

Hab. Panama, Volcan de Chiriqui 2500–4000 feet (*Champion*).

A small series.

XII. STENOCERUS.

Anthribus, Germar (nec Fabricius, 1792), Ins. Spec. Nov. p. 174 (1824).
Stenocerus, Schoenherr, Curc. Disp. Meth. p. 39 (1826) (type: *fulvitarsis*) ; Jekel, Ins. Saund. i. p. 100 (1855) ; Lacord. Gen. Col. vii. p. 523 (1866) ; Gemm. & Harold, Cat. Col. ix. p. 2730 (1872) (partim).

Range: South and Central America.

♂ ♀. Rostrum flat, rather thin, more or less gradually dilated apically. Antennal groove subventral, covered, oblong, about midway between eye and base of mandible, generally somewhat nearer the latter. Under lip broadly bilobate, not divided down to the insertion of the labial palpus. Eye lateral, slightly oblique, elliptical. Antenna thin, club loose, flat, segments 10 and 11 thin at base as if shortly stalked, all segments with long bristles; segment 3 longer than 1+2 and than 4, 8 the shortest, 9 and 10 truncate, cordiform, 11 elongate-elliptical, subacuminate. Pronotum conical, widest just before the base at the curve of the carina ; the latter flexed forward at sides, approaching base in middle. Elytra about half as long again as broad, or less.

As pointed out by Lacordaire, the division of *Stenocerus* into groups according to differences in the shape of the prothorax and elytra, as attempted by Jekel (*l. c.*), cannot be relied upon, and he calls attention to the diversity in the development of the mesosternal process. The shape of this process, coupled with distinctions in the rostrum, sufficiently distinguishes the members of this genus. The characters, too, upon which Jekel based the majority of his species are unstable. Fortunately the types of his *Stenoceri*, with the exception of *blanchardi*, are preserved in the British Museum, so that I have been able to compare them.

As we do not know *nigrotessellatus*, Blanch. (1843), and *blanchardi*, Jekel (1855), they are not included in the following key.

a. Rostrum with conspicuous mesial carina . . . . . *b*.
Rostrum without mesial carina, mesially impressed . . . . . *d*.

b. Intracoxal lamella of prosternum projecting beyond coxæ, not notched between coxæ ; mesosternal process higher than coxæ, concave in front, rounded at apex, with the anterior margin entire or feebly sinuate . . . . . *c*.
Intracoxal lamella of prosternum not notched between coxæ, not projecting beyond them ; mesosternal process twice as broad as high, vertical, not concave in front . . . . . [*paraguayensis*, Jord. (1895) ; Paraguay.]
Intracoxal lamella of prosternum not projecting beyond hinder side of coxæ, notched between them; mesosternal process not higher than coxæ, concave from base to apex, therefore appearing bituberculate . . . . . Species No. 2.

c. Mesosternal process entire at apex ; pronotum black, with or without large luteous area from base forward . . . . . Species No. 1.
Mesosternal process feebly sinuate at apex ; prothorax brownish-black, spotted with velvety-black . . . . . [*fulvitarsis*, Germ. (1824) ; South America.]

d. Central area of pronotum and a round sutural patch on elytra velvety-black, sharply defined . . . . . [*sigillatus*, sp. n.; Brazil.]
No such black marking . . . . . *e.*

e. Rostrum with a fine mesial raised line within the impression . . . . . Species No. 3.
Rostrum without that line; ♂ with small mesial tubercles on abdomen.
[*varipes*, Fåhr. (1839); Brazil.]
Rostrum without that line; ♂ without abdominal tubercles.
[*angulicollis*, Jekel (1855); Colombia.]

Jekel's *Stenocerus amazonæ*, *brunnescens*, *longulus*, *mexicanus*, *migratorius*, and *tessellatus* are all the same species; his *testudo* is the same as Erichson's *velatus*, and his *verticalis* the same as Fåhræus's *varipes*. Erichson's *aspis* and Reed's *vidali* are doubtless species of *Dinocentrus*. Motschoulsky's *variegatus* is the Central-American form of *longulus*, the name *variegatus* sinking as a synonym of *mexicanus*. Montrouzier's *macrophthalmus* is a *Litocerus*, and his *quadrituberculatus* a *Hylopemon* (*quadrituberculatus* standing in the Munich Catalogue, p. 2730, under *Stenocerus* and *Hylopemon*).

1. Stenocerus velatus.

Stenocerus velatus, Erichson, Wiegm. Arch. Naturg. xiii. 1, p. 125. n. 1 (1847).

There are apparently two geographical forms of this insect, one from South America (*velatus*=*testudo*, Jekel, Ins. Saund. i. p. 104), the other from Panama :—

Subsp. *nigritarsis*.
Stenocerus testudo, ab. *nigritarsis*, Jordan, Stett. ent. Zeit. lvi. p. 166 (1895) [1].
♀. Pronotum and tarsi black.

Hab. Panama, Chiriqui (*Mus. Tring, ex Staudinger & Bang-Haas*).

Only one example (♀) of this form is known, which I originally described as an individual aberration, but which I now take to be a representative of a melanic race peculiar to (the southern states of) Central America, considering that the Central-American specimens of the next species show also some melanism in the tarsi.

2. Stenocerus longulus.

Stenocerus longulus, Jekel, Ins. Saund. i. p. 106 (1855) [1].

Hab. South America [1].

Very variable in size, shape, and colour. In the ♂ the anal ventral segment is convex; in the ♀ it is somewhat impressed, bearing a tuft in front of the impression. What I consider to be individual varieties of *S. longulus* have been described by Jekel as representing five distinct species. The differential characters given by Jekel do not hold good, nor have I been able to find new distinctions. In some specimens the lateral carina of the prothorax is more strongly angulate than in others (side view), and in some males with this character the second abdominal segment bears a small mesial apical rounded tubercle or swelling. The mesosternal process may be strongly or rather feebly bituberculate. The elytra may be comparatively short, resembling those of *S. fulvipes*, or more slender. All such distinctions are inconstant and occur in a greater or less degree of development according to individuals. However, the Central-American specimens are, on the whole, slightly different from those from South America. The mesial carina of the rostrum is generally nearly effaced at the base of the rostrum and does not extend beyond the eyes on

the head; and the second tarsal segment is always black on the upperside, which is rarely the case in South-American examples. The name of this insect is

Subsp. *mexicanus*. (Tab. XI. figg. 5, 5 *a*.)

Stenocerus mexicanus, Jekel, l. c. p. 109 (1855) [1].

Stenocerus variegatus, Motsch. Bull. Moscou, xlii. 2, p. 234 (1874) [2].

Hab. MEXICO, Toxpam (*Sallé*), Venta de Peregrino in Guerrero and Teapa in Tabasco (*H. H. Smith*); BRITISH HONDURAS, Rio Sarstoon (*Blancaneaux*); GUATEMALA, San Juan in Vera Paz, El Reposo (*Champion*); HONDURAS, San Pedro Sula (*Wittkugel*); COSTA RICA, San Carlos (*Schild-Burgdorf, in Mus. Tring*); NICARAGUA, Chontales (*Belt, Janson, Richardson*); PANAMA, Volcan de Chiriqui, Bugaba (*Champion*).

3. **Stenocerus platalea**, sp. n. (Tab. XI. figg. 6, 6 *a*.)

♂ ♀. Rostrum obviously longer than in *S. varipes*, Fåhr. (1839), from Brazil, and *S. angulicollis*, Jekel (1855), from Colombia, mesially impressed longitudinally as in those species, generally with a very thin but distinct raised mesial line in the depression. Pronotum less deeply impressed than in *S. varipes* and the carina laterally more evenly rounded (dorsal aspect). Elytra also less depressed behind base. Abdomen of ♂ without the mesial tufts found in the ♂ of *S. varipes*. Mesosternal process more or less concave, declivous.

Length $6\frac{1}{2}$–$10\frac{1}{2}$ millim.

Hab. MEXICO, Sierra de Durango (*Mus. Tring*), Playa Vicente (*Sallé*); GUATEMALA, San Juan in Vera Paz [type], Pantaleon, El Reposo (*Champion*); NICARAGUA, Chontales (*Janson*).

It is possible that *S. varipes*, *S. angulicollis*, and *S. platalea* are geographical forms of one species, or at least the last two; but as only one small specimen of *S. angulicollis* is known, the insects are best treated as distinct for the present.

XIII. TRACHYTROPIS.

Trachytropis, Jordan, Nov. Zool. xi. p. 266 (1904).

One species known.

1. **Trachytropis asper.** (Tab. XII. fig. 17.)

Trachytropis asper, Jordan, l. c.[1].

Hab. MEXICO [1], Jalapa (*Höge*); GUATEMALA, San Gerónimo (*Champion*).

Two females.

XIV. GONIOCLŒUS.

Anthribus, Strabus, Tropideres auctorum, partim.

*Goniocl*œ*us*, Jordan, Nov. Zool. xi. p. 260 (1904) (type: *baccatus*).

Range: America.

♂ ♀. Dorsal carina of prothorax curved forward at sides, reaching middle. Mesosternal process angulate laterally, the coxæ being incised. (Tab. XI. fig. 27 *b*.)

Key to the Central-American Species.

a. Rostrum half as long again as broad, with prominent mesial carina . . . . Species No. 1.
Carina absent, or short and not prominent . . . . . *b.*

b. Rostrum, head, and pronotum smoothly and rather sparingly punctured; eye with sharply marked buffish-white border . . . . . Species No. 2.
No such border to eye, or rostrum coarsely punctured . . . . . *c.*

c. Elytra, besides the tubercles in the third interstice, with numerous smaller ones. *d.*
Only three more or less distinct tubercles or pustules situated in the third interstice . . . . . *p.*

d. Pubescence of upperside almost uniformly ochraceous; pronotum with three heavy tubercles; a distinct but short mesial carina on rostrum . . . . . Species No. 10.
Pubescence variegated, often olivaceous-black . . . . . *e.*

e. Fifth tubercle of third interstice of elytron larger than the fourth . . . . Species No. 9.
Fifth tubercle of third interstice of elytron smaller than the fourth, sometimes absent . . . . . *f.*

f. Head, pronotum, and pygidium with some sharply defined, conspicuous, ochreous spots . . . . . Species No. 21.
Without such spots . . . . . *g.*

g. A very large black area common to both elytra contrasting sharply with the base, sides, and apex of the latter . . . . . *h.*
A conspicuous buffish-white spot behind middle of elytra; base of rostrum grey; legs black . . . . . Species No. 15.
Markings different . . . . . *i.*

h. Apex of rostrum sinuate . . . . . Species No. 17.
Apex of rostrum not distinctly sinuate . . . . . Species No. 18.

i. Dorsal carina of pronotum strongly convex . . . . . Species No. 12.
Dorsal carina of pronotum not or feebly so . . . . . *j.*

j. Legs black or brown-black; tibiæ with grey ring or spot . . . . . *k.*
Legs ringed with rufous . . . . . *o.*

k. Side of pronotum sinuate between dorsal carina and apex of lateral one; third interspace of elytron with five tubercles: a small species, $3\frac{1}{2}$ mm. long . . Species No. 16.
Side of pronotum not sinuate before dorsal carina; fifth tubercle of third interspace of elytron absent; frons more than half the width of the rostrum. Species No. 8.
Side of pronotum not or very feebly sinuate before dorsal carina; frons less than half the width of the rostrum . . . . . *l.*

l. Dorsal carina widely interrupted in middle . . . . . Species No. 5.
Dorsal carina not or feebly interrupted . . . . . *m.*

m. Pronotum dispersedly punctured on disc, with three rather distinct callosities. Species Nos. 3 and 4.
Pronotum dispersedly punctured, callosities hardly vestigial . . . . . Species No. 6.
Pronotum more densely punctured . . . . . *n.*

n. End-segment of antenna luteous . . . . . Species No. 11.
End-segment of antenna rufescent-brown; tubercles of elytra tipped with luteous tufts . . . . . Species No. 7.

	End-segment of antenna rufescent-brown; elytral tubercles not tipped with luteous tufts	*o*.
o.	Fifth tubercle of third interspace of elytron vestigial; posterior claw of ♂ toothed.	Species No. 13.
	Fifth tubercle distinct; posterior claw of ♂ not toothed	Species No. 14.
p.	Apex of elytra and pygidium uniformly luteous-grey	*q*.
	Apex of elytra and pygidium not uniformly luteous-grey; a conspicuous buff spot at base of third interstice and another in middle	Species No. 22.
	Apex of elytra and pygidium not luteous-grey; third interstice with three rather heavy tubercles	Species No. 19.
	Carina of pronotum strongly convex; elytra with ochreous spot between second and third pustules	Species No. 23.
q.	End-segment of antenna luteous; basal two-fifths of tibiæ rufous	Species No. 18.
	End-segment of antenna and tibiæ rufescent-brown	Species No. 20.

1. **Gonioclœus umbrinus.** (Tab. XI. figg. 27, 27 *a*, *b*.)

Gonioclœus umbrinus, Jordan, Nov. Zool. xi. p. 264. n. 45 (1904) [1].

Easily recognized by the mesial carina of the rostrum extending from the base to near the apical edge.

Hab. Mexico [1], Toxpam (*Sallé*); Guatemala, San Juan in Vera Paz (*Champion*), Coban in Vera Paz (*Conradt*); Nicaragua, Chontales (*Belt*, *Janson*); Panama, Volcan de Chiriqui (*Champion*).

Numerous specimens.

2. **Gonioclœus orbitalis.** (Tab. XI. figg. 28, 28 *a*.)

Stroboscopus orbitalis, Lacord. Gen. Col. vii. p. 534, nota 1 (1866) [1]; Gemm. & Har. Cat. Col. ix. p. 2733 (1872) [2].

♂ ♀. Head and rostrum dispersedly punctured. Eye edged with buff; dots of similar pubescence also on the prothorax and elytra, those on the latter numerous in the seventh and ninth interspaces and in the posterior half of the first and third. Pronotum almost smooth, there being only a few punctures on the disc at each side of the slight mesial callosity, and some more punctures towards the lateral carina. The mesosternal process is very slightly bent backwards at the apex, the apical edge projecting below the metasternum as a distinct ridge. The punctures of the elytra are small and the stripes hardly at all impressed.

Hab. Mexico, Toxpam (*Sallé*).

One male and two females.

3. **Gonioclœus funereus,** sp. n. (Tab. XI. figg. 29, 29 *a*, *b*.)

♂ ♀. Similar to *G. orbitalis*. The pubescence more variegated, especially on the pronotum; elytron with a few buff dots, of which one stands on the postmedian tubercle of the third interspace.

Rostrum shorter and, like the frons, much more densely and coarsely punctured. End-segment of antenna longer than in *G. orbitalis*, being longer than broad. Puncturation of pronotum also coarser and more extended. Elytra again coarsely punctured; fifth interspace with a tubercle in between the subapical tubercles of the third and fifth interspaces, all the interspaces being more or less pustulated. Meso-

sternal process curved backwards at the apex, the apical edge hardly projecting beyond the base of the metanotum. Abdominal segments 2–4 of the ♂ mesially subcarinate, segment 5 of ♂ more punctured and less convex than in the ♂ of *G. orbitalis*.

Length 9–10½ millim.

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui [type] (*Champion*).

Three males and one female. The male from Chontales differs from the type in some details, the frons being rather wider, the abdomen less distinctly carinate, &c., but evidently belongs to the same species.

4. **Gonioclœus tholerus,** sp. n.

♂ ♀. In colour practically the same as *G. funereus*. Rostrum one-third broader than long, very densely and coarsely punctured, like the head. Tenth antennal segment broader than long in both sexes, eleventh as long as broad in the ♂, broader in the ♀. Pronotum coarsely punctured, except at apex and on the callosities, which stand in front of the carina, the middle one of which is rather more elevate than in the preceding; carina angulate in the middle, the angle pointing backwards. Elytra coarsely punctured and pustulated as in *G. funereus*; the base of both together feebly emarginate, almost straight; post-median tubercle of fifth interspace closer to the large postmedian tubercle of the third interspace than in *G. funereus*. Prosternum coarsely punctured. Abdomen feebly convex along the middle in the ♂.

Length 8–9 millim.

Hab. GUATEMALA, Chacoj and San Gerónimo in Vera Paz (*Champion*).

One pair.

5. **Gonioclœus fractus,** sp. n.

♀. Like *G. tholerus*. Rostrum longer, not so coarsely punctured. Frons one-third the width of the rostrum. End-segment of antenna a little wider than long. Pronotum without distinct callosities, though depressed at each side near middle in front of carina; the latter rather widely interrupted in middle. Apical tubercle of elytron less prominent than in *G. funereus* and *G. tholerus*; seventh interspace without tubercle in middle.

Length 9 millim.

Hab. PANAMA, Bugaba (*Champion*).

One female.

6. **Gonioclœus niger.** (Tab. XI. figg. 30, 30 *a*.)

Monoclœus niger, Jordan, Nov. Zool. xi. p. 260. n. 37 (1904)[1].

In this species, which was originally described from a single specimen, the pronotum appears almost smooth, the punctures not being so large as in *G. fractus*, *G. tholerus*, and *G. funereus*, and the mesial callosity vestigial.

Hab. COSTA RICA, Zarzero[1] (*Schild-Burgdorf, in Mus. Tring*); PANAMA, Volcan de Chiriqui (*Champion*: one male, two females).

7. **Gonioclœus carbonarius,** sp. n.

♂. Upperside irrorated with clay-colour, which forms a narrow, interrupted, mesial vitta on pronotum. Rostrum and frons very coarsely punctured; the former one-third broader than long; frons less than one-third the width of the rostrum. Pronotum with large punctures from the carina forward, except

2 UU 2

in middle of apex and on the callosities, mesial callosity distinct. Tubercles of elytra less elevate than in all the preceding species; the basal tubercle the largest, the second and third of the third interspace not much longer than the fourth, lateral tubercles (in fifth and seventh interspaces) small, but distinct; basal edge of each elytron somewhat rounded, not emarginate; punctures large. End-segment of antenna hardly longer than broad.

Length 6 millim.

Hab. GUATEMALA, Panzos in Vera Paz (*Champion*).

Two males.

8. **Gonioclœus laticeps,** sp. n.

♀. Close to *G. carbonarius*. Rostrum twice as broad as long, narrowed from antennæ forward, very densely punctured. Frons more than half the width of the rostrum. End-segment of antenna luteous, as long as broad. Prothorax nearly half as broad again as long, densely punctured except a narrow space along apical edge; mesial callosity not much elevate, bearing also some punctures; dorsal carina feebly angulate in middle, the angle pointing backwards. Tubercles of elytra not provided with clayish tufts, the second and third of the third interstice elongate, less elevate than the first, no fifth tubercle in third interstice. Legs black-brown, tibiæ with an indistinct grey ring near base.

Length 5 millim.

Hab. GUATEMALA, Sinanja in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Two females.

9. **Gonioclœus tarsalis.** (Tab. XII. figg. 1, 1 *a*.)

Gonioclœus tarsalis, Jordan, Nov. Zool. xi. p. 263. n. 43 (1904) [1].

There is a ♂ in the Godman and Salvin collection which I believe is that of *G. tarsalis,* described from a ♀ from Costa Rica. It bears a conspicuous luteous-grey spot on the pronotum extending from the mesial tubercle to the base. As the specimen differs also somewhat in structure from the three females known to me, I append a description of it.

Rostrum not quite twice as broad as long, with shallow depressions, not densely punctured. Eye twice as long as broad. Frons one-third the width of the rostrum. Club of antenna slender, segment 10 half as long again as broad, 11 one-fourth longer than wide. Pronotum with three feebly elevate callosities, punctured from carina forward, except in these callosities and in middle of apex; carina feebly curved backwards in middle. Elytra emarginate together at base, coarsely punctured; four tubercles in third interspace, the second small, the third very large, the fourth minute; interspaces 5, 7, and 9 pustulated and tubercled, the last tubercles of the seventh interspace rather acute and prominent; sutural angle raised into a prominent tubercle. Underside somewhat villose in middle; prosternum punctured; mesosternal process slanting; abdomen minutely punctured in middle. Posterior trochanter not mucronate; mid tibia with spur at apex; claw of hind tarsus with tooth.

Length 10 millim.

Hab. NICARAGUA, Chontales (*Belt*); COSTA RICA, San Carlos [1] (*Mus. Tring*).

10. **Gonioclœus politus,** sp. n. (Tab. XII. figg. 2, 2 *a*.)

♂ ♀. Rufescent-brown, strongly glossy, clothed with an ochraceous pubescence, more or less variegated with grey beneath; base of antenna and the legs more or less rufous, tibiæ with a brown ring in middle; club of antenna blackish, the last segment not being luteous.

Rostrum twice as broad as long, with a short obtuse mesial carina which does not reach apex, coarsely punctured like head. Pronotum short, at least half as wide again as long, with three prominent tubercles of nearly equal height, disc punctured around these tubercles. Elytra nearly straight at base,

the edge of each feebly rounded, deeply punctured; third interspace with three high tubercles and a fourth smaller one, besides a small apical tubercle, the second tubercle not smaller than the third; fifth interspace with three small tubercles; seventh interspace with four small tubercles, of which the last standing on apical declivity is the highest; ninth interspace with a subapical tubercle and some pustules. Prosternum punctured; metasternum smooth in middle; mesosternal process curved backwards at apex. Mid tibia of ♂ with apical spur, claw of hind-tarsus toothed in both sexes; trochanter of hind leg not acute.

Length 4–6 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

Three pairs.

11. **Gonioclœus mexicanus,** sp. n. (Tab. XII. figg. 3, 3 *a*.)

♂ ♀. Black; upperside pubescent olive, underside sparsely pubescent-grey; a mesial line on pronotum clayish; antenna and legs rufescent, end-segment of antenna luteous.

Rostrum a little broader than long, mesially impressed, very densely rugate-punctate. Eye one-third longer than broad. Frons half the width of the rostrum, very coarsely punctured. Ninth segment of antenna a little longer than broad, tenth not quite twice as broad as long, eleventh about as broad as long. Prothorax as long as broad, widest close to apex of lateral carina; notum coarsely punctured, except in middle at apex and on the three callosities; the middle callosity highest, rather abrupt in front; carina flexed forward at the side in a wide curve, feebly angulate in middle, the angle pointing backwards; no basal lateral longitudinal carina. Elytra emarginate together at base; third interspace with five tubercles, first the largest, second and third of about equal size, fourth somewhat smaller, and fifth still smaller but quite distinct, standing close to sutural angle; fifth interspace with three tubercles, the first before and the second in middle, the third standing before apical declivity; on seventh interspace one very distinct tubercle standing between second and third tubercles of fifth interspace; ninth interspace with three pustules in posterior half; a small grey spot on anterior side of third tubercle of third interspace. Prosternum punctured all over. Posterior trochanter mucronate in ♂, feebly projecting in ♀. In ♂ mid tibia with apical spur and posterior claw without tooth.

Length 4–6 millim.

Hab. Mexico, Toxpam (*Sallé*).

Seven males and four females.

12. **Gonioclœus inversus,** sp. n. (Tab. XII. figg. 5, 5 *a*.)

♂. Brownish-black, pubescent olivaceous-grey, variegated with brown and luteous; a large mesial patch behind carina of prothorax buff; shaft of antenna and legs rufescent, last antennal segment luteous.

Rostrum nearly twice as broad as long, puncturation not dense. Eye about half as long again as broad. Frons one-third the width of the rostrum, with large punctures. Club of antenna slender; segment 9 twice as long as broad, 10 half as long again as broad, and 11 a little longer than broad. Prothorax widest at curvature of carina, irregularly impressed on disc, with three feebly raised callosities, coarsely punctured from carina to apex, except on these callosities and in middle of apex; dorsal carina evenly and strongly convex. Each elytron rounded on its basal edge; puncturation coarse and dense; third interspace with four tubercles, the first and third large, the second small, and the fourth minute; interspaces 5, 7, and 9 with small tubercles in apical half, no distinct tubercle at sutural angle. Underside and legs as in *G. curvatus*.

Length 4 millim.

Hab. Mexico, Toxpam (*Sallé*).

One male. The dorsal carina of the pronotum is much more curved forward than in any other species of *Gonioclœus* from Central America.

13. **Gonioclœus curvatus,** sp. n. (Tab. XII. figg. 4, 4 *a*.)

♂ ♀. Brownish-black, covered with a clayish-coloured pubescence, which is rather more sparse below than above, variegated with brown; legs rufescent, tarsi palest; last segment of antenna more or less luteous. Rostrum twice as broad as long, densely punctured, with three shallow depressions. Eyes about twice as long as broad, almost contiguous in ♂, the frons being in the ♂ about as wide as the seventh antennal segment is long, while in the ♀ the frons is less than one-third the width of the rostrum. Ninth segment of antenna little longer than apically broad, tenth at least twice as broad as long, being broader in the ♀ than in the ♂, eleventh about as broad as long. Prothorax somewhat depressed on each side of a moderately elevate mesial tubercle, and then again subtuberculate, punctured from the carina forward, except in middle of apex and on the callosities; carina curving forward in middle. Elytra together emarginate at base; four tubercles in third interspace, the first three rather prominent, the fourth somewhat smaller, five small tubercles in fifth interspace and several in seventh, no prominent tubercle close to sutural angle; punctures deep. Pygidium longer in ♂ than in ♀. Prosternum punctured; mesosternal process curved backwards at apex, and in ♂ hairy like the middle of the metasternum and the last abdominal segment; first abdominal segment punctured in middle. Fore and mid tibiæ with apical spur in ♂; posterior trochanter not mucronate; claw of hind tarsus toothed.

Length 5–6 millim.

Hab. Mexico, Toxpam (*Sallé*); British Honduras, Belize (*Blancaneaux*).

Three males and two females.

14. **Gonioclœus silvanus,** sp. n. (Tab. XII. figg. 6, 6 *a*.)

♀. At first sight very similar to *G. nanus*, but differing in the following points:—Rostrum one-third broader than long, obtusely angulate above the antennal cavities. Club of antenna longer than in *G. nanus*, especially the ninth segment. Callosities of pronotum much more distinct, especially the middle one, carina quite different, somewhat irregular, feebly convex in middle, flexed forward at sides in a wide curve, the sides of the prothorax appearing rounded. Elytra more depressed, rufescent at shoulder, suture from middle backwards and ninth interspace tessellated with luteous pubescence; grey spot in front of third tubercle of third interspace larger than in *G. nanus*, pustules of fifth and seventh interspaces higher, sutural angle more elevate. Femora and tibiæ more regularly ringed with brown and grey.

Length $3\frac{2}{3}$ millim.

Hab. Mexico, Toxpam (*Sallé*), Juquila (*Höge*).

Two males and one female.

15. **Gonioclœus linifer,** sp. n. (Tab. XII. figg. 7, 7 *a*.)

♀. Black, finely pubescent grey; rostrum, a short streak before scutellum, and a large but ill-defined shoulder-patch on elytron clay-colour, a spot at frontal side of third tubercle of third elytral interspace white, the two spots connected with one another across the suture, underside greyish.

Rostrum nearly twice as broad as long, densely rugate-punctate, like frons. Eye less convex behind than in the two preceding species. Antenna short, black, feebly rufescent at base and tip; eighth segment broader than seventh, distinctly dilated, ninth more than half as broad again as long. Pronotum more extendedly punctured than in the preceding species, the impunctate apical mesial space being very small; mesial tubercle high, acute, lateral ones obsolete; carina somewhat irregular, interrupted in middle, where it is a little convex, laterally flexed forward in a wide but not regular curve, prothorax widest at apex of lateral carina. Each elytron distinctly rounded between scutellum and humeral depression; three tubercles in third interspace, not higher than mesial one of pronotum but wider, fifth and seventh

interspaces with four or five black pustules. Legs brownish-black, a sub-basal ring of tibiæ and the claws rufescent.

Length 3 millim.

Hab. GUATEMALA, Las Mercedes (*Champion*).

One female.

16. **Gonioclœus reflexus,** sp. n. (Tab. XII. figg. 8, 8 *a*.)

♂ ♀. Similar to *G. inversus*. Deeper black, the yellowish patch in front of the scutellum smaller. Eye shorter and posteriorly more convex, projecting more strongly than in *G. inversus*. Segments of club of antenna shorter. Callosities of pronotum higher; dorsal carina much less curved forward, feebly recurved backwards in centre. Elytra rather more uneven, the second tubercle of the third interspace higher, not being much smaller than the third.

Length $3\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Two males and eight females.

17. **Gonioclœus nanus,** sp. n. (Tab. XII. figg. 9, 9 *a*.)

♀. Blackish-brown, variegated with grey and clayish-coloured pubescence, which is densest on the rostrum, along the eyes, and on the elytra, encircling on the latter a large black sutural area, which is irrorated with grey. Antenna and legs rufous, segments 9 and 10, middle of femora, and apices of tibiæ brown, the rufous parts of the legs pubescent-grey.

Rostrum about as long as broad. Frons half the width of the rostrum. Club of antenna short; segments 9 and 11 a little broader than, 10 twice as broad as, long. Pronotum as broad as long, mesial tubercle vestigial, lateral ones obsolete, dorsal carina almost straight, lateral carina nearly horizontal, very distinct in a dorsal view, ending rather abruptly before middle; a mesial interrupted vitta, narrow, clay-colour, like the dorsal lateral irroration. Elytra cylindrical, feebly emarginate together at base; interspaces of the rows of large punctures slightly uneven, third interspace with four moderately high tubercles, the third being the largest, the fourth much the smallest, second and third with a grey spot in front, fifth and seventh interspace somewhat elevate behind and pustulated. Prosternum coarsely punctured.

Length $3\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba (*Champion*).

One specimen, a ♀, judging from the unarmed middle tibia.

18. **Gonioclœus pumilus,** sp. n. (Tab. XII. fig. 10.)

♀. Brownish-black; rostrum, border of eyes, an interrupted mesial vitta and lateral speckles on pronotum, some dots near base of elytra, two in third interspace before apex and a number of others in ninth interspace, a broad sub-basal ring on tibia, and base of first dorsal segment luteous-grey; underside and femora variegated with grey.

Rostrum one-fourth broader than long, frons more than half the width of the rostrum. Club of antenna broad; eighth segment distinctly wider than seventh, ninth nearly twice as broad as long, halfmoon-shaped. Pronotum punctured all over from carina to apical edge; mesial tubercle vestigial, lateral ones absent; dorsal carina straight, rather abruptly curved forwards at sides. Elytron slightly rounded at basal edge from scutellum to humeral depression, rows of punctures regular, alternate interspaces subcostate, especially the third, tubercles and pustules vestigial.

Length $2\frac{1}{2}$–3 millim.

Hab. Mexico, Toxpam (*Sallé*), Juquila (*Höge*); Guatemala, Las Mercedes [type] (*Champion*).

Three specimens.

19. **Gonioclœus pusillus,** sp. n. (Tab. XII. figg. 11, 11 *a*.)

♀. Rufescent, clothed with a clayish-coloured pubescence. Rostrum nearly twice as broad as long, with a feebly elevate short mesial carina, longitudinally punctate-rugate like head. Frons nearly two-thirds the width of the rostrum. Segments 9 and 10 of the rufous antenna brown, 9 a little longer than apically broad. Prothorax broader than long, widest at angle of carina, blackish above, except apical margin, which is rufous, this colour gradually more extended laterally, a blackish half-ring expanding from side to side and bordering the rufescent apical portion is without clayish-coloured pubescence; middle of pronotum without large punctures; callosities vestigial; dorsal carina very feebly convex, practically straight, lateral angle distinct, though strongly rounded. Elytra each rounded at basal edge between scutellum and humeral depression, short, deeply striate-punctate, the alternate interspace subcarinate; three black-tufted tubercles in third interspace, of the same size and equidistant, not much elevate, a minute fourth tubercle farther backwards; some black pustules in fifth interspace and a number of black dots farther laterally; sutural angles not elevate. Underside pubescent-grey. Legs rufous, greater portion of femora and middle of tibiæ brown.

Length 3½–4 millim.

Hab. Guatemala, El Tumbador, Zapote (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

Three females.

20. **Gonioclœus icas,** sp. n. (Tab. XII. fig. 12.)

♀. Brownish-black; upperside pubescent clay-colour, irrorated with brown and black, second and third tubercles of elytron black, apical declivity of elytra and pygidium evenly pubescent-clay-colour, this area truncate in front and sharply defined; underside more grey.

Rostrum half as wide again as broad, rugosely punctured like head. Frons half the width of the rostrum. Shaft of antenna and tip of last segment rufescent, club brown, segment 9 as broad at apex as long. Prothorax broader than long, widest at angle of carina, without large punctures on notum, except some laterally; callosities obsolete, hardly traceable; dorsal carina practically straight, the lateral angle a little over 90°, with the apex rounded off. Elytra each with rounded basal edge; punctures less deep than in the preceding species and interspaces more even; three rounded and moderately elevate tubercles in third interspace, some feebly raised black dots in fifth, seventh, and ninth interspaces. Legs somewhat rufescent, especially the tarsi; tibiæ not distinctly ringed.

Length 4 millim.

Hab. Mexico, Juquila (*Sallé*).

Two females.

21. **Gonioclœus ornaticeps,** sp. n. (Tab. XII. fig. 13.)

♀. Brownish-black, pubescent cinnamon-brown above variegated with grey, grey beneath variegated with brown at sides; a spot on each side at base of rostrum, an interrupted border to eye, a mesial dash and two basal spots on pronotum, and two spots at base of pygidium, ochreous.

Rostrum nearly twice as broad as long, punctate-rugulose, with trace of a smooth mesial carina. Frons half the width of the rostrum. Occiput somewhat convex, not flattened. Eyes about one-fourth longer than wide. Antenna brown, club broad, segment 9 as broad at apex as long. Prothorax broader than long, widest at angle of carina, without large punctures on notum, but with two small rounded tubercles and

a trace of a third in between them, transversely depressed in front of these tubercles; dorsal carina practically straight, lateral angle obtuse, rounded, but distinct. Elytra oblong, basal edge rounded, puncturation not coarse, three tubercles in third interspace and a smaller fourth near sutural angle, another small but distinct tubercle in seventh interspace before apical declivity, with a pustule in front, ninth interspace with a pustule at apex. Prosternum transversely bi-depressed; fore coxæ rather widely apart. Legs rufescent, tibiæ not conspicuously ringed.

Length $4\frac{1}{2}$ millim.

Hab. MEXICO, Toxpam (*Sallé*).

Two females.

22. **Gonioclœus insignis,** sp. n. (Tab. XII. fig. 14.)

♂ ♀. Black, pubescence grey, mottled and dotted with black above, more evenly grey beneath; an abbreviated vitta on pronotum, a basal and a postmedian linear spot in third interspace of elytron and a dot further back, as well as a sub-basal ring on tibiæ, clayish-buff; shaft of antenna and tarsi rufescent, last antennal segment luteous.

Rostrum nearly twice as broad as long, densely and coarsely punctured. Frons two-thirds (♀) or one-half (♂) the width of the rostrum, with numerous deep punctures like those on occiput. Eye about one-fourth longer than wide. Club of antenna elongate, segment 9 longer than broad, 10 as broad as long or longer, 11 as long as 9 or longer. Prothorax as long as wide, broadest at angle of carina, beset with deep punctures all over from carina to apical edge, no tubercles, but a faint vestige of a mesial callosity before carina, the latter slightly convex, being faintly concave in middle, lateral angle obtuse, rounded; apex of notum produced over part of occiput. Elytra evenly punctate-striate, interspaces all somewhat convex, alternate ones inconspicuously tessellated, apical declivity evenly convex, no tubercles, but basal callosity vestigial, basal edge of each elytron rounded. Rostrum densely beset with deep punctures. Metasternum, besides the lateral punctures, also with some large punctures in middle. Abdomen with deep punctures all over, these punctures, however, dispersed, forming at the bases of the segments almost a regular transverse row; posterior trochanter produced into a point in ♂.

Length 5 millim.

Hab. MEXICO, Toxpam (*Sallé*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Panima in Vera Paz (*Champion*).

Two males and three females.

23. **Gonioclœus parvulus,** sp. n. (Tab. XII. fig. 15.)

♀. Brown-black, variegated above with ochraceous and grey, pubescence of underside grey, a mesial line on occiput and another posteriorly on pronotum clayish-ochreous, a rather large spot on each elytron occupying the space between the second and third pustules of the third interstice ochreous, conspicuous.

Rostrum somewhat constricted at base, widest before the antennæ, a little broader than long, coarsely punctate-rugate, mesially impressed. Head coarsely punctured; frons a little more than half the width of the rostrum. Antenna rufescent: segment 8 nearly twice as broad as 7; 9 a little longer than broad, not triangular, the sides being almost parallel; 10 one-third broader than long. Pronotum nearly as long as broad, coarsely punctured except at apex, irregularly grooved, without tubercles; carina convex, flexed forward laterally in a nearly even curve. Elytra elongate, subcylindrical, rather coarsely striate-punctate, tessellated with brown and grey, sixth and eighth interstices nearly uniformly tawny, shoulder rufescent, third interstice with three feebly elevate blackish pustules. Prosternum and side of metasternum densely punctured. Apex of femora, base of tibiæ, and nearly the entire tarsi rufescent.

Length $2\frac{1}{2}$ millim.

Hab. GUATEMALA, Calderas 7000 feet (*Champion*).

One female.

XV. HIERA, gen. nov.

♂. Rostrum spatulate, subcylindrical at base, deeply sinuate in middle of apical margin, mesially carinate. Eyes approximate. Third segment of antenna as long as fourth and fifth together. Carina of pronotum curved forward at sides, longitudinal basal carina vestigial. Mesosternal process not angulate at sides. Anterior tibia with brush-like lobe at apex on inner side; first segment of mid tarsus two-thirds the length of the tibia, more than three times the length of the second segment; tooth of claw large.

Type: *H. oculata*, sp. n.

Allied to *Homoclœus*.

1. **Hiera oculata,** sp. n. (Tab. XII. figg. 16; 16 *a*, anterior leg.)

♂. Brown-black, pubescent greyish-clay-colour, this pubescence dense on rostrum, along eyes, on sides of pronotum, and on under surface; each elytron with a round velvety-black spot behind the middle, bordered with clayish-grey posteriorly, a narrow band of the same velvety colour further back, widest laterally.

Rostrum a little longer than apically broad, punctate-rugate, slightly porrect, with a rather heavy carina. Frons vertical, about as wide at the narrowest point as the second antennal segment is long, very densely punctate like occiput, subreticulate. Antenna black, shaft slightly rufescent at the joints: segment 4 longer than 5; 8 shorter than 7; 9 triangular, about one-third longer than broad; 10 twice as long as broad, transverse. Prothorax nearly twice as wide at the carina as at apex, one-third broader than long, densely but minutely granulate-punctate; carina concave. Elytra together slightly emarginate at base, subtruncate, depressed along suture, finely punctate-striate, the interstices feebly convex behind. Pygidium much longer than broad, regularly rounded at apex. Sterna rather coarsely and densely punctured at sides; punctures of abdomen small; abdomen depressed in middle, last segment convex, subtruncate. A broad antemedian ring on tibiæ and greater part of first tarsal segment grey.

Length $7\frac{1}{2}$ millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Three males.

XVI. HOMOCLŒUS.

Anthribus, *Tropideres* auctorum, partim.

Homoclœus, Jordan, Nov. Zool. xi. p. 264 (1904) (type: *vestitus*).

Range: South and Central America, West Indies.

Rostrum porrect, with more or less distinct mesial carina. Mesosternal process not angulate at sides, the coxæ being round.

Key to the Central-American Species.

a.	Pronotum densely punctured, elytron without prominent tubercles	Species No. 2.
	Pronotum not punctured, elytron with at least one tubercle	*b.*
b.	Pronotum with distinct round mesial tubercle, third tubercle of elytron also distinct	Species No. 5
	No mesial tubercle on pronotum, third tubercle of elytron vestigial or absent .	*c.*
c.	Second tubercle of elytron as high as first	Species No. 4.
	Second tubercle of elytron much less elevate than first, costiform	*d.*
d.	Upperside dotted with milky-white pubescence	Species No. 1.
	Upperside variegated with brown and clay-colour	Species No. 3.

1. **Homoclœus pardalis,** sp. n. (Tab. XI. figg. 23, 23 *a*, *b* *.)

♂ ♀. Rufescent above, brown beneath, marked all over with more or less sharply defined white dots. Rostrum about as long as broad, rugosely punctured, carina not quite reaching to apex. Head longitudinally plicate; frons less (♂) or a little more (♀) than half the width of the rostrum. Antenna rufescent, end-segment luteous; segment 9 as long as broad, 10 more than twice as broad as long. Prothorax conical from carina forward, feebly depressed anteriorly and posteriorly on disc, no distinct puncturation; carina slightly concave, feebly curved forward at sides. Elytra regularly punctate-striate, alternate interstices convex, two tubercles in third interstice, one subbasal, the other antemedian, both brown, with a white dot in front and behind. Legs rufescent, dotted and ringed with white.

Length 3–4 millim.

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Volcan de Chiriqui, Bugaba (*Champion*).

A small series.

2. **Homoclœus puncticollis,** sp. n. (Tab. XI. fig. 24.)

♂ ♀. Black-brown; beneath pubescent grey, marmorated with brown at the sides; upperside luteous-grey, irrorated and spotted with brown; third interstice of elytron with conspicuous, brown and grey, elongate spots.

Rostrum longer than broad, densely punctate-rugate, with short and feebly elevate mesial carina. Head plicate, grey pubescence condensed at edge of eye. Antenna rufescent-brown, end-segment luteous; club longer in ♂ than in ♀; segment 9 longer than broad in both sexes. Prothorax conical, very densely punctate above, carina practically straight, hardly at all curved forwards at sides. Elytra regularly punctate-striate; alternate interstices convex, third subcostate. Pygidium gibbose in middle. Prosternum rather densely punctured. Femora grey, spotted with brown; tibiæ and tarsi brown, a very broad subbasal ring on tibia and the greater part of the first tarsal segment grey.

Length 3–5 millim.

Hab. MEXICO, Toxpam (*Sallé*).

Three males and one female. A specimen from Senahu, Vera Paz (*Champion*), nearly agrees with *H. puncticollis*, except that it has the eyes more widely separated.

3. **Homoclœus concolor.** (Tab. XI. figg. 25, 25 *a*.)

Homoclœus concolor, Jordan, Nov. Zool. xi. p. 264. n. 46 (1904) [1].

The specimens now seen differ from the type in having the markings grey, instead of tawny.

Hab. COSTA RICA, Piedras Negras (*Schild-Burgdorf, in Mus. Tring*); PANAMA, David (*Champion*).—BRAZIL, Para [1].

Two females. A male from Guatemala, Zapote (*Champion*), probably belongs to this species; it has the grey dots smaller than in the females.

4. **Homoclœus femoralis.** (Tab. XI. figg. 26, 26 *a*.)

Homoclœus femoralis, Jordan, Nov. Zool. xi. p. 265. n. 47 (1904) [1].

Third interspace of elytron with two tubercles. Tibiæ and tarsi luteous.

Hab. NICARAGUA [1], Chontales (*Belt*).

Four specimens.

* This and the following three species are incorrectly placed under the generic name *Monoclœus* on the Plate.

5. **Homoclœus xanthopus,** sp. n.

♂ ♀. Similar to *H. femoralis*. Carina of pronotum more concave, disc irregularly depressed, with mesial globosity; tubercles of elytron much higher, the second a little more forward in position, with a third, smaller, one between the second and the apex of elytron, seventh interstice more elevate than in *H. concolor*; legs brown, femora ringed with grey and brown, tibiæ with two narrow grey rings, greater part of first tarsal segment and claw-segment rufous, pubescent-grey.

Length 5–6½ millim.

Hab. Costa Rica, Irazu (*Rogers*); Panama, Volcan de Chiriqui [type] (*Champion*).

Four specimens.

XVII. MONOCLŒUS.

Anthribus auctorum, partim.

Monoclœus, Jordan, Nov. Zool. xi. p. 255 (1904) (type: *elaphrinus*).

Range: South and Central America.

♂ ♀. Rostrum without carina or only a vestige of it. Frons in a plane with rostrum, vertical. Eye prominent. Carina not or very little curved forward at sides. Mid coxæ not round. Mesosternal process not angulate laterally.

Key to the Central-American Species.

a. Carina of prothorax curved forward to middle of sides . . . . . Species No. 4.
Carina of prothorax very little curved forward at sides; elytron with three tubercles in third interstice . . . . . *b*.

b. Elytra rufous, except a large proximal sutural area . . . . . Species No. 1.
Elytra not rufous, pronotum with conspicuous mesial vitta . . . . . Species No. 3.
Elytra not rufous, pronotum without conspicuous mesial vitta . . . . . Species No. 2.

1. **Monoclœus anas,** sp. n. (Tab. XI. fig. 19.)

♂. Rostrum rufescent, densely pubescent clayish-grey, dilated at apex, longer than broad. Frons about as broad as the club of the antenna. Eye strongly prominent. Occiput and pronotum black, rather sparsely pubescent luteous-grey. Pronotum nearly twice as wide at carina as at apex, carina situated at basal third, feebly concave, slightly curved forward at sides. Elytra rufous, a large sutural area brown, this area extending from base to second tubercle, including the latter, sparsely pubescent luteous-grey; three rather large tubercles in third interspace, one near base, the second just before middle, and the third on apical declivity, besides some pustules in the third, fifth, seventh, and ninth interspaces. Underside black, pubescent-grey, the pubescence not dense. Legs rufescent-brown; apical half of femora and basal half of tibiæ and of first segment of tarsi rufous.

Length 2⅔ millim.

Hab. Guatemala, Totonicapam 10,000 feet (*Champion*).

One male.

2. **Monoclœus idæus.** (Tab. XI. figg. 20, 20 *a*.)

Monoclœus idæus, Jordan, Nov. Zool. xi. p. 258. n. 34 (1904) [1].

In some of the specimens the rostrum is densely pubescent luteous-grey. The ♂ bears on the inner side of the fore tibia, at the apex, a small brush-like lobe.

Hab. MEXICO[1], Sierra de Durango? (*Mus. Tring*), Cerro de Plumas (*Höge*); GUATEMALA, Cerro Zunil, Capetillo (*Champion*).

A small series.

3. **Monoclœus gracilis,** sp. n. (Tab. XI. figg. 21, 21 *a*.)

♂. Close to *M. idœus*; larger; rostrum with vestige of mesial carina; eyes larger, farther apart; ninth segment of antenna longer; pronotum with conspicuous mesial vitta, carina convex in middle and again near sides; tubercles of elytra higher; legs black, with a narrow sub-basal ring on the tibiæ and the basal half of the first tarsal segment rufous, pubescent-grey; abdomen villose beneath.

Length 5 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One male.

4. **Monoclœus lioderes,** sp. n. (Tab. XI. figg. 22, 22 *a*.)

♀. Brownish-black, pubescent luteous-grey above, grey beneath, densely marmorated and irrorated with brown. Rostrum very densely punctate-rugate, somewhat dilated at apex, longer than broad, apical margin sinuate. Head plicate; frons one-third the width of the rostrum. Eye half as long again as broad. Antennæ brown, base of first segment and apex of last rufous; segment 9 longer than broad, 10 twice as broad as long, 11 as long as 9.

Prothorax half as broad again as long, impunctate above, except a few indistinct punctures laterally, sides rounded behind, the carina being laterally evenly curved forward, oblique basal longitudinal carina very distinct. Elytra deeply punctate-striate, interstices somewhat convex, two heavy tubercles situated in third interstice, the one near the base, the other behind middle, black-brown, clayish-coloured in front and behind. Underside without distinct punctures. Legs spotted with clay-coloured dots; tarsi rufous, second segment and apex of first brown.

Length 6½ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One female. This species is not a true *Monoclœus*. It combines to a certain extent the characters of this genus, *Homoclœus*, and *Gonioclœus*, differing from *Gonioclœus* in the non-angulate mesosternal process, from *Homoclœus* in the absence of a mesial carina from the rostrum, and from both *Homoclœus* and *Monoclœus* in the antebasal carina of the pronotum being curved forward to the middle of the side, and in the longitudinal basal carina being very distinct.

XVIII. GYMNOGNATHUS.

Anthribus, Germar, Ins. Spec. Nov. p. 177 (1824) (partim).
Anthribus (*Gymnognathus*), Schoenherr, Curc. Disp. Meth. p. 37 (1826) (typus: *ancora*).
Gymnognathus, Schoenherr, Gen. Spec. Curc. i. p. 163 (1833); Lacord. Gen. Col. vii. p. 525 (1866); Gemm. & Harr. Cat. Col. ix. p. 2731 (1872).

Range: South and Central America; species very numerous.

♂ ♀. Rostrum more or less porrect, flat, widest at apex; labium truncate or emarginate. Antennal groove prolonged downwards, curved. Eye large, lateral, entire, finely granulate. Carina of pronotum widely separate from base. Elytra more or less strongly flattened at suture, basal edge of each strongly rounded, projecting forward.

Key to the Central-American Species.

a.	Head and anterior portion of pronotum red	*b.*
	Head and anterior portion of pronotum not red	*c.*
b.	Pygidium pubescent luteous-grey, with narrow brown mesial vitta	Species No. 11.
	Pygidium rufescent-brown, with thin grey border	Species No. 10.
	Pygidium sparsely grey, with white mesial vitta	Species No. 9.
c.	Pygidium densely pubescent-white or luteous-grey, without brown vitta	*d.*
	Pygidium rufescent-brown, with white or grey mesial vitta or lateral border	*e.*
d.	Anal sternite rounded; pronotum longitudinally plicate	Species No. 8.
	Anal sternite strongly bidentate; pronotum not plicate	Species No. 7.
e.	Lateral carina extending to apical fourth of prothorax; pygidium with thin white mesial line	Species No. 4.
	Lateral carina reaching to middle only	*f.*
f.	Head with two luteous or white vittæ	*g.*
	Head entirely luteous or white above	*i.*
g.	Frons with three carinæ; fifth interspace of elytron subcostate before apical declivity	Species No. 1.
	Frons multiplicate, with or without a well-defined mesial carina; fifth interspace of elytron not subcostate	*h.*
h.	Pronotum irregularly plicate, with three isolated vittæ	Species No. 5.
	Pronotum not plicate; lateral vitta not separate from pubescence of underside except in middle	Species No. 6.
i.	Basal fourth of suture of elytra rufescent-brown	Species No. 2.
	Suture grey from base to apical declivity	Species No. 3.

1. **Gymnognathus scalaris,** sp. n. (Tab. XI. figg. 7, 7 *a*.)

♂ ♀. In general appearance similar to *G. ophiopsis*, Dalm. (1833). A vitta at each side on rostrum and head; on pronotum a mesial vitta situated in a depression, gradually narrowing anteriorly, two small dots laterally, and an interrupted lateral vitta imperfectly separated from pubescence of under surface; on elytra a large sutural area extending from base, where it expands to the shoulders, to near apical declivity, bisinuate on each side and also sinuate at apex; a brown sub-basal spot within the area on each elytron; suture and alternate stripes grey within the patch, or only the suture, three lateral spots, an elongate one below shoulder, another before and a third behind middle; a small oblique spot at apex near sutural angle; pygidium with thin, abbreviated, lateral vitta; on underside, a stripe beneath eye, another on prosternum, sides of meso- and metasternum and of first three abdominal segments, and a lateral spot on fourth segment; all these markings clayish-yellow. Rest of underside thinly pubescent-grey.

Rostrum spatulate, twice as long as broad in middle, with mesial carina, which is accompanied on each side by another carina from middle of rostrum backwards. Third segment of antenna at least half as long again as first. Prothorax longer than broad, carina slightly concave, lateral angle obtuse, rounded; basal longitudinal carina not quite the same in direction as lateral carina. Elytra strongly narrowing posteriorly, deeply depressed at suture, fifth interspace subcostate behind. Pygidium rounded, the angles feebly acuminate. Anal sternite strongly bidentate.

engths 7–10 millim.

Hab. Mexico, Toxpam (*Sallé*).

One male and two females: type, female.

2. **Gymnognathus claudia,** sp. n. (Tab. XI. figg. 8, 8 *a*.)

♂ ♀. Pygidium rounded; anal sternite long-bidentate. Black, pronotum and elytron rufescent-brown, first antennal segment, femora, and bases of tibiæ rufous. Head and rostrum with broad greyish-yellow mesial vitta which is continued to base of pronotum. An oblique, lateral, subventral, luteous-grey vitta on anterior half of prothorax; a small grey spot in front of dorsal carina halfway between mesial vitta and basal angle. Scutellum yellowish-grey. Elytron with grey lines: a line running from base of third interspace oblique towards suture, being connected before middle of suture by a transverse bar with the line of the other elytron, the line then turning obliquely laterad, ending on disc at apical third; at base this line continued along basal margin to scutellum as well as towards shoulder, turning backwards for a short distance before reaching shoulder-angle; a basal spot below shoulder; an angular sutural mark before apical declivity, sometimes continued to lateral margin; a small lateral marginal spot in middle. Pygidium with thin greyish-white or luteous lateral line and a short basal mesial line. Underside greyish-white, the pubescence condensed to distinct spots laterally on abdomen.

Rostrum half as long again as broad, rather deeply impressed as far as the yellowish vitta extends. Prothorax somewhat longer than basally broad; disc slightly depressed longitudinally in middle; angle of carina a little over 90°, with the tip rounded off; basal lateral carina forming equal angles with the dorsal and lateral carinæ.

Length 6–7 millim.

The shoulder-line of the elytron is sometimes connected with the dorsal line and with the infra-humeral spot.

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba, Volcan de Chiriqui [type] (*Champion*).

A series. Nearest to *G. tenuis*, Jord. (1895), from Brazil, but with the rostrum shorter and the pattern different.

3. **Gymnognathus polius,** sp. n. (Tab. XI. fig. 9.)

♂ ♀. Like *G. claudia*, but rostrum shorter, more broadly impressed, with conspicuous mesial carina. Prothorax shorter, more convex above, vitta broader. Pattern of elytra different from that of *G. claudia*: basal margin from scutellum to shoulder broadly grey, suture of the same colour from base to apical declivity, the grey pubescence becoming more sparse behind, the sutural area extending laterad to fourth interspace, sending out a spur in middle and a thinner line before apical declivity, the line reaching lateral margin; an oblique supra-humeral vitta extending obliquely towards sutural area, which it mostly reaches, isolating a rufescent patch of the ground-colour; a small lateral marginal grey spot in middle. Abdomen with much less distinct white lateral spots than in *G. claudia*.

Length 8 millim.

Hab. PANAMA, Bugaba, Chiriqui (*Champion*).

Three females, one broken male.

4. **Gymnognathus femoralis.** (Tab. XI. fig. 10.)

Gymnognathus femoralis, Jordan, Nov. Zool. iv. p. 175. n. 5 (1897) [1].

Two specimens, which are not in perfect condition. They differ from the Colombian examples in having the white lateral spots of the pronotum vestigial, the sutural luteous area of the elytra extending to the basal edge (there being no brown space around the scutellum), and the lateral spurs of that area shorter.

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba (*Champion*).—COLOMBIA, Rio Dagua [1] (*Rosenberg, in Mus. Tring*).

5. **Gymnognathus ampulla,** sp. n. (Tab. XI. fig. 11.)

♀. Pygidium subtruncate; anal sternite truncate. Black, upperside rufescent. Rostrum and head with a vitta on each side, bordering the eye and being continued as a thin line across pronotum to the base of the latter, the pronotum, moreover, bearing a broader mesial vitta, which gradually becomes narrower frontally. Elytra with an oblong sutural area extending from base to beyond middle, the patch bordered laterally by the fourth line of punctures, sinuate near base, emarginate at its apex, with the angles acute, the patch slightly produced posteriorly upon suture; a minute dot behind the patch in fourth interspace; an ovate apical spot on each elytron at suture, leaving the extreme angle of suture free; at base a small elongate spot above shoulder. All these markings grey, the sutural ones more or less shaded with ochraceous. Pygidium with a very thin grey line on each side. Underside white, slightly luteous laterally; metasternum and abdomen with brown lateral spots. Femora and bases of tibiæ rufous.

Rostrum one-third longer than apically broad, with distinct mesial carina. Prothorax a little longer than broad at base, dorsal carina straight in middle, curving backwards at sides, angle 90°, with the tip rounded, basal longitudinal carina in the direction of the lateral carina. Elytra slightly narrowing posteriorly, depressed from suture to fourth line of punctures. Pygidium nearly twice as long as broad.

Length 6 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One female. Nearest to *G. vitticollis*, Jord. (1896), from Brazil, but in that species the angle of the prothoracic carina is rounded, the elytra bear a brown sutural spot before the middle, the pygidium is strongly bidentate, &c.

6. **Gymnognathus thecla,** sp. n. (Tab. XI. fig. 12.)

♂. Pygidium bidentate, with two grey lateral vittæ; anal sternite rounded.

Of the usual colour; black beneath, densely pubescent white, with a brown lateral spot on anal segment, rufescent above, with white markings; head and rostrum with a vitta on each side bordering the eye and continued to base of pronotum, this vitta merged at apex and base of pronotum with the white under surface, separating an elongate rufescent spot from disc; a mesial vitta narrrowing in front. Elytra with large patch extending from base to beyond middle, dilated at base to lateral margins, isolating a rufescent humeral spot and a dorsal sub-basal one; before apical declivity a thin transverse band, oblique on each elytron, connected on suture with basal area; a small apical spot at sutural angle of each elytron, oblique. Pygidium with vestige of white median line at base, besides the rather broad lateral vittæ. Femora and extreme bases of tibiæ rufous.

Rostrum a little longer than apically broad, devoid of a distinct mesial carina. Pronotum shorter than broad; angle of carina 90°, only the extreme tip rounded off; basal longitudinal carina forming practically equal angles with the dorsal and lateral carinæ. Elytra cylindrical, sutural depression restricted. Pygidium as long as basally broad.

Length 5 millim.

Hab. PANAMA, Bugaba (*Champion*).

One male.

7. **Gymnognathus mexicanus,** sp. n. (Tab. XI. fig. 13.)

In colour and pattern somewhat resembling *G. hamatus*, Jord. (1904), but is very different in structure.

♀. Pygidium rounded, half as long again as basally broad, wholly white; anal sternite strongly bidentate.

Underside densely pubescent white, abdomen with brown lateral spots; upperside rufescent-brown, somewhat olivaceous, with white markings: a broad vitta on rostrum and head, tripartite on occiput; a mesial vitta on pronotum, broad behind, suddenly narrowed before middle, a few small spots at lateral carina, not separated from pubescence of underside; on elytra a large sutural patch extending from base to beyond middle,

expanding to shoulders, bisinuate at side and also sinuate at apex, including a brown spot behind scutellum; a large apical patch, bisinuate on each elytron, including a small brown sutural apical spot.

Rostrum one-third longer than broad in middle, broadly impressed, with a thin mesial carina which extends to occiput. Frons with an additional curved carina on each side near eye. Antenna short, third segment one-third longer than second. Prothorax shorter than broad, minutely punctured, not plicate; angle of carina a little over 90°, with the tip rounded off, basal longitudinal carina not quite the same in direction as lateral carina. Elytra short, flat above, but not at all sharply depressed at suture. Mesosternal process square.

Length $6\frac{1}{2}$ millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

One female.

8. **Gymnognathus abundans,** sp. n. (Tab. XI. fig. 14.)

♂ ♀. Close to *G. erna*, Jord. (1904), from Brazil. Lateral white pubescence of pronotum much less extended, the rufescent dorsal portions therefore broader; the apical patch of the elytra not interrupted at the suture, larger, rounded in front, including a brown apical sutural spot; pygidium shorter, rounded at apex in ♀, truncate in ♂, with the angles slightly dentiform.

The posterior expansion of the large grey basal area of the elytra is sometimes exaggerated, the area being connected with the limbal spot in a few specimens.

Length 2–6 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

A long series.

9. **Gymnognathus ruficlava,** sp. n. (Tab. XI. fig. 15.)

♀. Pygidium truncate, angles feebly acuminate, a white mesial vitta; anal sternite rounded.

Black beneath, pubescent grey, sides of meso- and metasternum washed with yellow; elytron rufescent-brown; prothorax brownish-black, apical third of pronotum, head, rostrum, femora and larger portion of tibiæ, first two segments of antenna, and club, rufous-red. Rostrum, frons, and pronotum covered with a rather thin grey pubescence, except red portion of the last; before base of pronotum several blackish spots on each side, the largest near middle, oblique, widest at base. Elytron thin, striped with white in the rows of punctures, thinly grey all over, except at base near scutellum and in an angle-shaped band which extends from shoulder to shoulder. Pygidium thinly grey, white mesial vitta not conspicuous, widest at apex.

Rostrum half as broad again as long, transversely depressed, middle somewhat raised. Frons convex, with mesial carina. Eye more oblique than usual in this genus, but not so much dorsal as in *Domoptolis*. Antenna very short. Prothorax shorter than broad; angle of carina 90°, with the tip rounded, basal longitudinal carina nearly in the same direction as lateral carina. Elytra shaped as in *G. emma*, Jord. (1904).

Length $4\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba (*Champion*).

One female.

10. **Gymnognathus calus,** sp. n. (Tab. XI. fig. 16.)

♀. Pygidium triangular, bidentate, with thin grey border; anal sternite rounded.

Black beneath, pubescent greyish-white, sides of meso- and metasternum yellowish, middle of metathoracic episternum brown, abdomen with vestigial brown lateral spots. Upperside rufescent-brown; rostrum, head, and pronotum (base excepted) rufous-red; club of antenna slightly rufescent, first segment rufous.

Rostrum and a line along eye, as well as apical border of pronotum, pale yellow. An anteriorly abbreviated, pointed, mesial vitta on pronotum and a triangular basal spot on each side yellowish-grey. Elytra with a large grey area from base to apical declivity, the area yellowish at base, extending from shoulder to shoulder, including a rufescent oblique stripe which runs from above shoulder to near suture, as well as a less distinct sutural spot behind scutellum; a streak below shoulder nearly touching the large patch; a submarginal spot in middle, transverse, but also produced backwards; a subapical lateral spot extending dorsad to grey area; this area, which is denser pubescent at its edges than in the centre, emarginate in middle and again more deeply before apex, the latter being truncate, except for being produced backwards on suture; a small apical dot at sutural angle.

Rostrum about as long as broad, with mesial carina, which is continued over the frons. Prothorax somewhat broader than long; angle of carina 90°, tip very feebly rounded off, basal longitudinal carina oblique, not in the same direction as lateral carina. Elytra subcylindrical, hardly depressed at suture. Pygidium not quite twice as long as broad.

Length $3\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba (*Champion*).

One female.

11. **Gymnognathus pulcher,** sp. n. (Tab. XI. fig. 17.)

♀. Closely allied to *G. emma*, Jord. (1904), the head and anterior half of pronotum being red as in that species. Rostrum much longer, being nearly twice as long as broad in middle. Lateral basal luteous patch of pronotum nearly square, truncate in front, not connected with triangular mesial streak, centred with brown; angle of carina more strongly rounded. Pattern of elytra different: a short line or a spot behind scutellum; a spot at base above shoulder, this spot continuous with, or separate from, an oblique streak which runs obliquely from near shoulder to third line of punctures, following this stripe to apical third, then turned nearly at a right angle sidewards, but curving obliquely backwards before reaching margin; nearly parallel with this line and in front of it another line beginning before middle of sixth stripe of punctures; a patch below shoulder produced backwards; all these markings greyish-white, not very conspicuous. Rufescent mesial stripe of pygidium much narrower at base than the luteous sides.

Length 5–6 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Two females.

XIX. DOMOPTOLIS.

Domoptolis, Jordan, Nov. Zool. xi. p. 253 (1904) (type: *menetriesi*).

Range: South and Central America.

Rostrum without mesial carina beneath. Eyes oblique, subdorsal; frons therefore trapeziform, narrowing anteriorly.

1. **Domoptolis championi,** sp. n. (Tab. XI. figg. 18, 18 *a*.)

♀. Pygidium long, white, rounded at apex; anal sternite also rounded. Pubescent white beneath, rufescent above. Rostrum and head ochraceous, a large central patch on occiput rufescent. Pronotum with three greyish-white lines, one in middle, widening behind, and one from each basal angle extending obliquely forward to near apex, white pubescence of underside also extended dorsad at apex. Elytra each with a laterally open greyish-white ring from shoulder to suture and back to lateral margin, reaching this before middle; two lines starting at suture before apical declivity, one running obliquely backwards to outer margin, the other running along suture to apex. Pygidium and underside unicolorous. Femora and bases of tibiæ rufous.

Rostrum very little longer than broad, without mesial carina. Eye very feebly emarginate-truncate anteriorly,

oblique in position, the head therefore narrowing strongly anteriorly. Antenna with white hairs beneath; third segment nearly twice the length of fourth. Pronotum broader than long, longitudinally plicate on disc, with large, very shallow punctures laterally, subreticulate; angle of carina 90°, basal longitudinal carina at practically equal angles with lateral and dorsal carinæ. Elytra short, hardly at all depressed at suture. Pygidium twice and one-half as long as basally broad.

Length 3 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One specimen, apparently a female. *D. championi* stands intermediate between *Gymnognathus* and *Domoptolis*, Jord. (1904). As the latter is based on a single species, I abstain from proposing a new genus for the present insect. The antennal cavity is as large as in *Gymnognathus erna*, Jord. (1904). There is no mesial carina on the underside of the rostrum.

XX. NEANTHRIBUS, gen. nov.

♂ ♀. Rostrum short, with a more or less distinct mesial carina, which is continued on to frons, but is interrupted at base of rostrum by a punctiform groove. Eye lateral, close to antennal groove, truncate in front or very feebly emarginate. Antenna longer in ♂ than in ♀; a club of three segments, which are hairy underneath in the males. Carina of pronotum basal, being vertically above the true basal edge, angle 90° or more, with the tip more or less rounded off, lateral carina extended a little beyond middle; a transverse row of three tufts in middle of pronotum. Elytra as broad as prothorax, cylindrical, not depressed, with tufts or pustules, lateral edge often with long hairs. Prosternum very short; fore coxæ well separate, as are mid and hind coxæ. Legs short, often villose.

Type: *N. championi*, sp. n.

Range: America.

The American insects allied to the European *Anthribus albinus* form a group generically distinct from the Old World representatives of *Anthribus*. When describing in 1904 a number of species of *Neanthribus* under the generic name *Anthribus* (Nov. Zool. xi. pp. 296–300) I abstained from proposing a new genus for their reception, as at that time I had no evidence that these insects could be distinguished generically in both sexes from *Toxonotus*, Lacord., a genus also closely allied to *Anthribus* and based upon a Cuban species, of which I had only two males. As Lacordaire states in the diagnosis of *Toxonotus*—and no subsequent author appears to have corrected the statement—that the female is devoid of the peculiar spine into which the first tarsal segment of the male is produced, I thought it possible that *Toxonotus* might prove not to be generically distinct from *Anthribus*. On receipt of more material of *Toxonotus*, among which there is an undoubted female, as the sexual organs prove, I find that the female has the same tarsal spine as the male, at least in the only species so far described, *T. fascicularis*, Schoenh. (1833), occurring in Cuba and Florida. Probably Lacordaire mistook some species of *Neanthribus* for the female of *T. fascicularis*, *Neanthribus* being also represented in Cuba, according to a specimen in the Tring Museum bearing the label "Cuba."

All the twenty odd species of *Neanthribus* known to me have three prominent tufts on the pronotum. The insect named *Anthribus lividus* by Leconte and Horn is described as being without tufts. As the beak, moreover, is said to be entirely flat, not at all carinate, I conclude that the N.-American species does not properly belong to *Neanthribus*.

Key to the Central-American Species.

a.	Pronotum with two small tufts or pustules at apical margin, mesial tuft larger than lateral ones, black behind or nearly all black	*b.*
	No apical tufts on pronotum	*c.*
b.	Pronotum with large black patch from base to mesial tuft	Species No. 1.
	Pronotum without this patch	Species No. 2.
c.	Legs villose with long white hairs	*d.*
	Legs not villose	Species No. 9.
d.	Apex of elytra variegated, with black spot on suture	*e.*
	Apex of elytra white, at least apical half of declivous portion not spotted . .	*g.*
e.	No regular black markings on pronotum; tufts black, small	*f.*
	Pronotum with regular black markings; mesial tuft bright luteous	Species No. 8.
f.	Apex of elytra with three black spots, a round one on suture and a smaller ovate one at each sutural angle; two very small tufts at base of elytron in first and third interspaces	Species No. 3.
	Apex of elytra mottled with brown, white, and clay-colour, an elongated spot on suture, no distinct dots at sutural angles; one rather larger tuft at base of elytron situated in third interspace	Species No. 4.
g.	Basal half of pronotum clay-colour; apical area of elytra extended to third tuft of third interspace, its anterior edge straight	Species No. 7.
	Basal half of pronotum more or less white; white apical area of elytra not sharply limited in front, its anterior edge not straight	*h.*
h.	Frons with white ring	Species No. 6.
	Frons without white ring	Species No. 5.

1. **Neanthribus championi,** sp. n. (Tab. XII. figg. 18, 18 *a*.)

♂ ♀. Blackish-brown, pubescent clayish-grey, variegated with brown and greyish-white. Antenna rufous, club brown, end-segment paler than 9 and 10. Legs long-hairy, rufescent, spotted with brown. Head and rostrum luteous, the former with indistinct white patches. Pronotum with a high mesial tuft which is black on the hinder side, this colour being continuous with a large black patch which extends to base and is variegated with some milky-white pubescence; rest of pronotum luteous, unicolorous in middle, variegated with brown laterally; a small tuft on each side of the large one, with two or one small, sharply marked, elongate, black spots in front; at apical margin two luteous tufts feebly tipped with white. Elytra tessellated with black along suture, the spots more or less oblique, a larger elongate spot before apex, a small black dot near tuberculiform sutural angle, alternate interspaces feebly pustulated and faintly tessellated, third interspace with sub-basal tuft and a smaller one before middle, obliquely behind the latter a still smaller pustule each in interspaces 5 and 7, the area behind these three tufts being grey; a larger tuft in third interspace before apical declivity and another of the same size further back in the fifth; side of elytron without long hairs.

Length $3\frac{1}{2}$–$5\frac{1}{2}$ millim.

Hab. Mexico, Jalapa, Almolonga, Cordova, Oaxaca (*Höge*); Guatemala, Las Mercedes [type], Capetillo, San Gerónimo (*Champion*).

A series.

2. **Neanthribus segregus,** sp. n. (Tab. XII. figg. 19, 19 *a*)

♀. Similar to *N. championi* in the pronotum bearing two tufts at the apical edge and a long one in the centre, but differs as follows:—

Pronotum more variegated with brown in front and at the sides, but before scutellum with a small black dot only; hinder side of apical tubercles and hinder and upper sides of lateral median tubercles black, frontal side creamy-white, this colour extended from lateral tubercle obliquely forward towards middle in two lines bordering a black curved linear spot joining the one of the other side, thus forming a black semicircle; a white dash laterally of lateral tubercle. Elytron more strongly punctured than in *N. championi*, suture less distinctly tessellated, tufts smaller, sutural area behind middle tufts more luteous, less white, lateral margin with some long hairs.

Length 5 millim.

Hab. Guatemala, Torola (*Champion*).

One female.

3. **Neanthribus hieronymus,** sp. n. (Tab. XII. figg. 20, 20 *a*.)

♂. Brown-black, shaft of antenna and legs rufescent; pubescence greyish clay-colour, some indistinct spots on head, suture and apical area of elytra whitish-grey, frons with two thin but distinct carinæ. Pronotum with three black tufts of nearly the same size, the mesial one placed a little more forward than the others, an ill-defined black spot extending from the lateral tubercle to the base, a trace of such a spot also behind the mesial tubercle as well as some white speckles. Elytron with long hairs at side-margin; suture slightly tessellated, pubescence of alternate interspaces feebly raised, faintly tessellated, an elongate sutural spot before apex black, three black tufts of equal size in third interspace, fifth interspace with a very small tuft or pustule obliquely behind the second tuft of the third interspace.

Length 4 millim.

Hab. Guatemala, San Gerónimo (*Champion*).

Three males.

4. **Neanthribus obtusus,** sp. n. (Tab. XII. figg. 21, 21 *a*.)

Pubescent luteous above, white or grey beneath. Rostrum and head feebly speckled with white, eye thinly edged with white. Pronotum broader, and less gradually narrowed at apex than usual, basal angle more obtuse; three small tufts tipped with black and the trace of another on each side towards the end of the lateral carina, area between the three tufts greyer than rest of pronotum; two lines of raised pubescence extend from mesial tuft obliquely forward. Elytra short, with white or luteous-grey sub-basal belt extending backwards at the sides, being gradually widened, a rounded apical area white or luteous, including a round black spot on suture and a smaller ovate one near each sutural angle; near base a small luteous-grey tuft in both first and third interspaces, more or less brown in front, third interspace, moreover, with a small tuft in middle and a slightly larger one before apical declivity, luteous, tipped with white, fifth interspace with pustule before apex; some indistinct brown tessellations at sides; lateral margin and the legs with long hairs.

Length $4\frac{1}{2}$–5 millim.

Hab. Panama, David, Bugaba, Tolé (*Champion*).

Two males and one female.

5. **Neanthribus plagicollis,** sp. n. (Tab. XII. fig. 22.)

♂ ♀. Pubescent greyish-white beneath, clay-colour above, variegated with greyish-white. Rostrum and head clay-colour, with some white speckles. Pronotum a little more distinctly sinuate laterally before the base than usual, with three luteous tufts and a very small additional one on each side, hinder side of tufts greyish-white like the area from the tufts to the base; apical half and sides speckled with white. Elytra with ochraceous stripes on alternate interspaces raised in small tufts, tipped with white, three tufts in third interspace and a subapical one in fifth interspace, large, several small but distinct tufts in fifth and seventh interspaces between base and middle; apical area uneven, cream-coloured or luteous-white, excised on suture, the latter indistinctly tessellated with black from base to beyond middle, the black dots more or less merged together between middle and apical declivity; lateral margin with long hairs.

Length 5–6 millim.

Hab. PANAMA, Caldera, San Lorenzo [type] (*Champion*).

One pair.

6. **Neanthribus stephanus,** sp. n. (Tab. XII. fig. 23.)

♂. In general colour like the preceding. Frons with two white lines extending from the mesial groove situated at the base of the rostrum backwards, curved, enclosing an ovate space, which is less densely pubescent than the rest of the head. Pronotum luteous in anterior half, greyish-white in posterior half; three luteous tufts of equal size, mesial one a little before middle. Elytra greyish-white, alternate interspaces more or less luteous; third interspace with three small tufts in the usual position, first and second luteous, third black in front, luteous behind, fifth interspace with a luteous tubercle before apex; apical area greyish-white, without black spots; side-margin with some long hairs.

Length $4\frac{1}{2}$ millim.

Hab. NICARAGUA, Chontales (*Janson*).

One male.

7. **Neanthribus apicalis,** sp. n. (Tab. XII. figg. 24, 24 *a*.)

♀. A little more elongate than *N. stephanus*. Rostrum greyish-white; frons with a white ring nearly as in *N. stephanus*. Pronotum luteous, faintly grey in front, with three small tufts which are feebly centred with black; a very slightly marked brown semicircle connects the lateral tubercles, the brown curved line bordered by raised pubescence which is partly white in front; outside this line, and parallel with it, the trace of a second semicircle. Elytra luteous, a small sutural area behind the base and the whole declivous apex from the third tuft of the third interspace backwards greyish-white, the apical area sharply limited; pubescence nearly even; third interspace with three small luteous tufts, the third white behind, fifth interspace with two very small tufts or pustules in the usual places, the second white; no long hairs at lateral edge; no black spots at apex. Legs rufous.

Length $4\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Two females.

8. **Neanthribus grammicus,** sp. n. (Tab. XII. fig. 25.)

♀. Pubescence clayish-cinnamon, variegated with brown and greyish-white. Basal angle of pronotum rounded off; three tufts on disc, mesial one pale luteous, the others rather larger and black, with the external hairs cinnamon; mesial tuft situated in a luteous-cinnamon patch, which is separated by a transverse black line from a large luteous-cinnamon patch which extends to the base, slightly narrowing basally; behind the lateral tufts there is a black patch, somewhat speckled with white; a black semicircle connects the lateral tufts in front, the semicircle being bordered externally by a

white-crested ridge of raised pubescence; this ridge does not reach the middle, but is posteriorly extended beyond the tufts; a similar but much shorter ridge outside the first; apical area luteous-cinnamon in middle; apical edge fringed with white. Elytra with alternate interspaces somewhat convex, dotted with white and black, especially the suture and the ninth interspace, the others being less distinctly or not at all dotted in the middle third of the elytron; three tufts in third interspace, first and third luteous-cinnamon, second bright luteous and gradually diminishing in height forming a kind of carina; fifth interspace with a minute tuft behind middle, before which tuft there is a black spot extending to seventh interspace, another tuft before apex tipped with white; apical area not white, uneven, an ill-defined, elongate, black, subapical spot on suture; sutural angles tuberculiform, with a black spot on outer side; lateral margin with long hairs.

Length 3–4½ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Three females.

9. **Neanthribus pistor,** sp. n. (Tab. XII. fig. 26.)

♂ ♀. Pubescent white. A spot behind eye and a few hairs an occiput clay-colour. Pronotum white, shaded with luteous from apical margin to tufts, the area extending laterally as far as the lateral tufts, rest of upperside of prothorax clayish-colour, much variegated with white and brown, a transverse spot behind the lateral tufts black; the three tufts rather small, of equal size, luteous, a transverse row of four small white dots, one dot before the lateral tuft, the other halfway to lateral carina. Elytra white, base and a transverse sutural area behind middle shaded and variegated with luteous; third interspace with three small luteous tufts, the third white behind, fifth and seventh interspaces each with two more or less distinct brown or black dots behind middle, no tuft before apex in fifth interspace; apical area uneven, white, a brown or black ovate spot on suture and a dot on each sutural angle; no long hairs on lateral margin. Legs variegated with luteous, especially the anterior ones, not roughly hairy as the other species here described.

Length 5–5½ millim.

Hab. PANAMA, Bugaba (*Champion*).

One pair.

XXI. EUPARIUS.

Anthribus, subgen. *Euparius,* Schoenherr, Curc. Disp. Meth. p. 36 (1826) (type: *tigris,* Gyll.).
Euparius, Schoenherr, Gen. Spec. Curc. i. p. 135 (1833); Jord. Nov. Zool. xi. p. 303 (1904).
Cratoparis, Schoenherr, l. c. v. p. 217 (1839) (nom. nov. loco *Euparius,* Schoenh., non *Euparia,* Serv.); Lacord. Gen. Col. vii. p. 579 (1866); Gemm. & Har. Cat. Col. ix. p. 2745 (1872) (partim); Jord. Stett. ent. Zeit. p. 202 (1895).

Range: South and Central America; some Old World species.

♂ ♀. Rostrum short and very stout, broader than thick. Mandible characteristic, being concave on the inner side and bearing a heavy tooth each at the dorsal and ventral edges (a character discovered by Schoenherr). Under lip broad, not deeply divided. Antennal groove close to eye, vertical. Eye coarsely granulated, lateral, truncate in front, or minutely sinuate (in *E. luridus* only). Antenna short; a club of three segments, broad. Carina of prothorax basal, slightly removed from basal edge in middle, mostly vertically above basal edge at lateral angle, here touching elytron, continued laterally to middle; angle 90° or less, seldom slightly obtuse, often very acute. Elytra very diverse, basal margin of each convex. Prosternum short in comparison with pronotum.

The ♂ has the antenna and tarsi somewhat longer than the ♀, the abdomen is often depressed mesially, bearing sometimes tufts, or tubercles, or patches of long hairs, and the hind femur is granulose beneath; in *E. calcaratus,* Jord. (1904), the ♂ has an apical spur to the hind tibia.

The genus is very abundantly represented in America, only a few species occurring in the Old World, and these may ultimately have to be removed generically from typical *Euparius*.

Key to the Central-American Species.

a.	Mesosternal process strongly tuberculate, the tubercle projecting forward . .	*b.*
	Mesosternal process simply convex or flat or slightly concave	*c.*
b.	Pronotum with 3 black spots laterally	Species No. 1.
	Pronotum with 2 or 4 black spots laterally	Species No. 2.
c.	End-segment of antenna pale luteous	*d.*
	End-segment of antenna not pale luteous, hardly paler on upperside than segments 9 and 10.	*l.*
d.	Pronotum gibbous in centre	Species No. 3.
	Pronotum not gibbous in centre.	*e.*
e.	Tarsi pale rufous.	Species No. 11.
	At least the second tarsal segment brown or black	*f.*
f.	First tarsal segment and middle of tibia bright ochraceous	Species No. 10.
	First tarsal segment and middle of tibia more or less whitish-grey	*g.*
g.	Eye with small sinus	Species No. 5.
	Eye truncate in front	*h.*
h.	Angle of pronotal carina acute, the basal angle of the pronotum very distinctly produced laterad	*i.*
	Angle of carina 90°, with the tip rounded off, basal angle of pronotum not, or very feebly, projecting sidewards	*j.*
i.	Alternate interspaces of elytron conspicuously tessellated	Species No. 4.
	Only the sutural interspace distinctly tessellated	Species No. 8.
j.	First and second segments of hind tarsus greyish-white above	*k.*
	Second hind-tarsal segment black or brown, tibiæ for the greater part black .	Species No. 9.
k.	Mesial depression of pronotum extending close to apex	Species No. 6.
	Pronotum depressed posteriorly, abdomen with lateral spots of denser pubescence	Species No. 7.
l.	Angle of pronotal carina acute, disc of pronotum with sharply-defined black triangular area	Species No. 12.
	Angle of carina not acute; antenna quite black; elytra with large white sutural area	Species No. 14.
	Angle of carina not acute; shaft of antenna rufous; elytra with small white speckles	Species No. 13.

1. Euparius tapirus.

Cratoparis tapirus, Labram and Imhoff, Gen. Curc. i. no. 57 (1842) [1]; Gemm. & Har. Cat. Col. ix. p. 2746 (1872) [2].

Hab. NICARAGUA, Chontales (*Belt, Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—SOUTH AMERICA, Cayenne [1 2].

2. **Euparius polius.** (Tab. XIII. figg. 3, 3 *a*.)

Euparius polius, Jordan, Nov. Zool. xi. p. 303. n. 131 (1904) [1].

This species is almost intermediate between *E. tapirus* and *E. tigris*, Gyll. (1833), but is structurally more closely allied to the latter. It differs from *E. tapirus* especially in the prominent lateral carina of the pronotum, in the smaller number of spots on the thorax and elytra, in the broad black mesial area of the abdomen not being interrupted at the apices of the segments, in the abdomen possessing only one series of black spots on each side, and other details.

The two specimens in the collection, both from Panama, differ slightly from the pair upon which the original description was based in being yellowish in tint, and in the elytra bearing a distinct black spot on the humeral callosity.

Hab. PANAMA, Bugaba (*Champion*).—COLOMBIA [1] (*Mus. Tring*).

Two males.

3. **Euparius ajax.**

Cratoparis ajax, Jekel, Ins. Saund. i. p. 124, t. 1. fig. 8 (1855) [1]; Gemm. & Har. Cat. Col. ix. p. 2745 (1872) [2].

The pronotal carina is biconvex, being angulate in middle. The pro- and mesosternites are punctured at the sides, the former also in front of the coxæ, the mesosternum granulose in middle. The abdomen is deeply impressed in ♂ and the apices of the segments are clothed with a long pubescence in the groove.

Hab. NICARAGUA, Chontales (*Belt*, *Janson*).—AMAZONS [1 2].

Three males and one female.

4. **Euparius torquatus.**

Cratoparis torquatus, Jekel, Ins. Saund. i. p. 127 (1855) [1]; Gemm. & Har. Cat. Col. ix. p. 2746 (1872) [2].

A common species, which varies a good deal in size and shape. Four of the specimens from Mexico and Guatemala bear a white angular sutural spot on the elytra at the base pointing forward, the scutellum and a mesial line on pronotum being also white. In other specimens that patch is vestigial, while the majority of individuals are practically without a trace of it.

Hab. MEXICO [1 2], Sierra de Durango ? (*Mus. Tring*), Jalapa, Cerro de Plumas, Cordova (*Höge*), Toxpam, Playa Vicente (*Sallé*); BRITISH HONDURAS, Belize, Rio Hondo (*Blancaneaux*); GUATEMALA, Yzabal (*Sallé*), Teleman and Panzos in Vera Paz, El Tumbador, El Reposo, San Isidro, Zapote (*Champion*); NICARAGUA, Chontales (*Belt*, *Janson*); COSTA RICA, San José (*Schild-Burgdorf*, *in Mus. Tring*); PANAMA, Volcan de Chiriqui (*Champion*).

5. **Euparius luridus.**

Cratoparis luridus, Fåhræus, in Schoenh. Gen. Spec. Curc. v. p. 229. n. 18 (1839) [1]; Jekel, Ins. Saund. i. p. 129 (1855) [2]; Gemm. & Har. Cat. Col. ix. p. 2746 (1872) [3].

Cratoparis apicicornis, Gemm. & Har. (ex Dejean, Cat.), l. c. [4].

Cratoparis luridus var. *lignarius*, Gemm. & Har. (ex Dejean, Cat.), l. c. [5].

This is the only known species in which the eye has a distinct, though small, sinus behind the insertion of the

antenna. The insect resembles *E. torquatus* somewhat in colour, and has also the basal angle of the prothorax nearly as acute as that species. The sides of the sternites, which bear numerous large punctures in *E. torquatus*, are not punctured in *E. luridus*.

Hab. NICARAGUA, Chontales (*Belt*, *Janson*); PANAMA, David, Bugaba, Volcan de Chiriqui, Caldera (*Champion*).—SOUTH AMERICA, Carthagena [4], Cayenne [1 3 5], Amazons [2], Peru (*Mus. Tring*).

6. **Euparius similis.** (Tab. XIII. fig. 1.)

Euparius similis, Jordan, Nov. Zool. xi. p. 304. n. 135 (1904) [1].

♂ ♀. Black-brown; densely pubescent greyish-white beneath; pubescence of upperside olivaceous-grey, with the head, a triangular mesial area on pronotum from the base forward, and sutural half of each elytron greyish-white, the sutural area constricted before middle and again before apex; antenna and legs rufous, tip of tibiæ and the tarsi more or less black-brown, the latter, however, pubescent-grey; ninth and tenth antennal segments black; sutural and alternate interspaces of elytra with black dots. Rostrum mesially impressed at base. Antennal segments 9 and 10 strongly asymmetrical, and more than twice as long as apically broad, longer than 11, 10 longer than broad. Pronotum depressed at base, the depression gradually disappearing, only vestigial in middle, sides not sinuate before the basal angle, which is 90°, with the tip rounded off. Elytra rather strongly impressed at suture, third interspace subcostate, especially behind the basal callosity; fifth and seventh interspaces somewhat convex.

Prosternum smooth in middle. No punctures on side of mesosternum. Mesosternal process flat, with the apex rounded and bent backwards. Abdomen of ♂ a little depressed in the middle, especially at base.

Hab. MEXICO, Playa Vicente (*Sallé*); PANAMA, Bugaba (*Champion*).—UPPER AMAZONS [1] (*Mus. Tring*).

A series. The species was originally described from two slightly worn specimens.

7. **Euparius dermestinus,** sp. n. (Tab. XIII. fig. 2.)

♂ ♀. More slender than the preceding species; pubescence luteous-grey, variegated with brown, the whole insect appearing much less white than *E. similis*; a brown-black median spot on elytron in interspaces 3, 4, and 5, conspicuous, continuous with a brown lateral area; underside more thinly pubescent than in *E. similis*; abdomen with side-spots of denser pubescence; the parts covered with luteous pubescence are rufous. Pronotum less impressed mesially.

Length 11½ millim.

Hab. MEXICO, Playa Vicente and Catemaco in Vera Cruz (*Sallé*).

One male and three females.

8. **Euparius suturalis,** sp. n. (Tab. XIII. fig. 4.)

♂ ♀. Rufescent-brown below, pubescent luteous-grey; rufescent above, densely covered with a clayish-ochraceous pubescence, more or less shaded and variegated with grey; suture of elytra blackish, or at least deeper brown than rest of the elytra, grey, tessellated with black-brown; segments 9 and 10 of antenna, a subbasal ring and apex of tibiæ, tip of first and the whole second and third tarsal segments black-brown, fourth segment brown; head, sides and apex of pronotum, base of elytra, and pygidium greyer than rest of upperside.

Rostrum with a fine mesial carina, generally concealed under the pubescence. Ninth and tenth antennal segments nearly symmetrical, the former rather less than half as long again as apically broad, broader than long in both sexes, eleventh segment longer than ninth.

Pronotum depressed before base, the depression vestigial on disc; side sinuate before base, basal angle acute,

with the tip rounded off; the lateral carina curved. Sutural and second interspaces of elytra rather strongly depressed; basal globosity distinct, but not very much elevate.

Prosternum punctured also before the coxæ. Mesosternal process flat, with the apex somewhat curved backwards. Abdomen feebly flattened in ♂, especially the fourth segment.

Length $6\frac{1}{2}$ millim.

Hab. Mexico, Toxpam (*Sallé*), Temax in Yucatan [type] (*Gaumer*); British Honduras, Rio Hondo (*Blancaneaux*); Guatemala, El Tumbador (*Champion*).

9. **Euparius cœlebs,** sp. n. (Tab. XIII. fig. 5.)

♂. Similar to *E. suturalis*; last antennal segment shorter; basal angle of pronotum less produced backwards, the sides of the pronotum less sinuated before angle, a large triangular area from base to near apex black-brown variegated with luteous; suture of elytra much less impressed, a basal sutural patch including the basal callosities and another sutural patch just before the middle black, with a whitish-grey sutural patch behind each, the suture itself tessellated with black-brown and whitish-grey; tibiæ blacker than in *E. suturalis*.

Length $4\frac{1}{2}$ millim.

Hab. Guatemala, Dueñas (*Champion*).

One male.

10. **Euparius ochrus,** sp. n. (Tab. XIII. fig. 6.)

♂. Brownish-black; pubescence of upperside brown, variegated with bright ochraceous, that of underside clayish-ochraceous, rather sparse; antenna and legs rufous, segments 9 and 10 of antenna brownish-black, basal half or two-thirds of femora, a subbasal ring and apex of tibiæ, and second tarsal segment brown; rufous parts of legs with bright ochraceous pubescence.

Rostrum with a fine mesial carina. Segments 9 and 10 of antenna almost symmetrical, 9 twice as long as broad, 10 one-third longer than broad, 11 a little longer than 9. Pronotum depressed only at base, convex in middle, very faintly sinuate laterally before base, angle of carina 90°, strongly rounded off. Elytra moderately impressed at suture, basal callosity not prominent, alternate interspaces convex, tessellate. Process of mesosternum subvertical, truncate, mesosternum ventrally dispersedly granulate; abdomen impressed mesially on segments 1–4, the impression strongly narrowing behind.

Length $8\frac{1}{2}$ millim.

Hab. Nicaragua, Chontales (*Belt*).

One male.

11. **Euparius rufus.**

Euparius rufus, Jordan, Nov. Zool. xi. p. 305. n. 138 (1904) [1].

A pale rufous-buff species, with a long straight lateral carina to the prothorax.

Hab. Nicaragua, Chontales (*Belt*, *Janson*).—Colombia [1]; Ecuador [1] (*Mus. Tring*).

Two males.

12. **Euparius thoracicus.** (Tab. XIII. fig. 7.)

Cratoparis thoracicus, Fåhræus, in Schoenh. Gen. Spec. Curc. v. p. 222. n. 8 (1839) [1]; Jekel, Ins. Saund. i. p. 127, notes 1 and 2 (1855) [2]; Gemm. & Har. Cat. Col. ix. p. 2746 (1872) [3].

The prosternum is punctured before the coxæ, not smooth.

Hab. Mexico [1 2 3], Totosinapan (*Sallé*), Cordova (*Höge*).

13. **Euparius frenatus,** sp. n. (Tab. XIII. fig. 8.)

♂. Black, sparsely irrorated with grey pubescence above and below; a streak running from antennal groove along eye, connected at base of rostrum with the streak of the other side by a transverse bar, some minute dots on pronotum, a ring in middle of tibiæ and another on first tarsal segment white; sutural and alternate interspaces of elytron inconspicuously tessellated with black and white, the white tessellations very small; antenna rufous, except club, last segment paler than the two preceding, but not luteous. In structure and shape similar to *E. lunatus*, Fabr. (1801), slenderer; rostrum without mesial carina; antennal segments 9 and 10 shorter and 11 longer; sides of sterna less coarsely punctured.

Length $4\frac{3}{4}$ millim.

Hab. MEXICO, Parada (*Sallé*).

One female.

14. **Euparius championi,** sp. n. (Tab. XIII. fig. 9.)

♀. Black; last antennal segment not luteous; claws alone rufous; under surface irrorated with grey; upperside of head and rostrum and of prothorax tawny, the pubescence becoming creamy laterally; frons, moreover, with creamy-white central spot, and occiput and pronotum variegated with brown; a large, laterally sinuate, sutural area on elytra extending from near base to apical declivity, and a transverse subapical band whitish-grey, feebly ochraceous, contiguous with a large subbasal tawny patch situated between the fourth and seventh stripes, black sides of elytra and scutellar area with some grey speckles, some tawny speckles before the apex and at the posterior expansion of the sutural patch, suture dotted with black; pygidium, a narrow ring on the tibiæ, and a broader one on the first segment of each tarsus whitish-grey. Rostrum with a distinct mesial carina. Antenna short, third segment hardly longer than the second, club nearly symmetrical, segments 9 and 10 almost the same in size and shape, much broader than long, halfmoon-shaped, 11 ovate, a little longer than broad. Pronotum feebly depressed in the middle from the carina forwards; angle of carina 90°, with the tip rounded off. Elytra subcylindrical, flattened above, but not much impressed at the suture; subbasal callosities not much raised. Sterna with large punctures at the sides, prosternum more finely punctured also in middle; mesosternal process slanting.

Length 4 millim.

Hab. GUATEMALA, Totonicapam between 8500 and 10,000 feet (*Champion*).

One male.

XXII. EUGONUS.

Eugonus, Schoenherr, Gen. Spec. Curc. i. p. 144 (1833) (type: *virgatus*); Lacord. Gen. Col. vii. p. 571 (1866); Gemm. & Har. Cat. Col. ix. p. 2743 (1872).

Schimatocheilus, Fåhræus (ex Dejean, Cat.), in Schoenh. l. c. v. p. 171 (1839) (sub syn.).

Phœnisor, Motschulsky, Bull. Soc. Imp. Nat. Moscou, xlviii. 2, p. 240 (1874) (type: *albofasciatus*).

♂ ♀. Rostrum very short, much broader than long, with a small, but distinct, rounded mesial sinus. Under lip divided down to mentum. Antennal groove close to eye, vertical. Eye lateral, sinuate. Antenna short, last segment the longest; a club of three segments. Pronotum with nearly parallel sides; dorsal carina basal, but not touching edge of elytra, straight, lateral carina also straight, extended to apical angle, which is projecting. Elytra the width of the prothorax, with parallel sides. Last abdominal segment short, the pygidium inclining forward, subventral. First tarsal segment shorter than second, or, at least, not longer. ♂ mostly with brushes of hairs on abdomen.

Motschulsky's description of *Phœnisor* applies apparently to the present genus, his *P. albofasciatus* being most likely based on specimens of *E. subcylindricus*, though the description of the pattern does not well fit that insect. There is nothing in the American fauna with which *Eugonus* could possibly be confounded, except the following

genus. *Eugonus* can be divided into two groups, the species of the typical group having the sterna smooth at the sides, the second group having them punctured laterally. In Central America only two species, belonging to the second group, have so far been found.

Suture and lateral edge of elytra dotted . . . . . Species No. 1.
Suture and lateral edge of elytra not dotted . . . . . Species No. 2.

1. Eugonus subcylindricus.

Eugonus subcylindricus, Fåhræus, in Schoenh. Gen. Spec. Curc. v. p. 172. n. 2 (1839)[1]; Gemm. & Har. Cat. Col. ix. p. 2743 (1872)[2].
Schimatocheilus subcylindricus, Fåhræus (Chevrolat, in litt.), l. c. (sub syn.)[3].
Schimatocheilus bostrichoides, Fåhræus (ex Dejean, Cat.), l. c. (sub syn.)[4].
Eugonus fallax, Gemm. & Har. (ex Dejean), l. c. (sub syn.)[5].
(?) *Phænisor albofasciatus*, Motsch. Bull. Soc. Imp. Nat. Moscou, xlviii. 2, p. 241 (1874)[6].

♂ ♀. A rather common species of wide distribution and great individual variability. The pubescence of the elytra is generally buffish-ochraceous, but sometimes whitish-grey.

Hab. Mexico[1 2 3], Toxpam, Playa Vicente (*Sallé*); Guatemala, Yzabal (*Sallé*), San Juan, Chacoj, and Panzos in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*).—Brazil[4 5].

2. Eugonus decorus, sp. n. (Tab. XIII. fig. 10.)

♂. Close to *E. ornatus*, Jord. (1904), from Brazil, the ninth antennal segment longer, the pattern different, and the legs not rufous except the knee-joints and the claws. Pronotum with a large but not sharply marked patch on each side extending forward beyond middle, touching the second of two small black dorso-lateral spots standing between apical margin and middle. Elytra greyish-white, ornamented with the following black markings: a round spot on shoulder; a cruciform sutural patch at base; a transverse submedian band consisting of an elliptical sutural patch and a larger lateral patch which is sinuate at the lateral margin and behind and is connected with the basal patch behind the shoulder; a large round subapical patch which reaches neither suture nor outer margin.
Length 5 millim.

Hab. Nicaragua, Chontales (*Janson*).

One male. Perhaps only a geographical race of *E. ornatus*, of which we have a series.

XXIII. EUGONODES.

Eugonodes, Jordan, Nov. Zool. xi. p. 302 (1904) (type: *marmoreus*).

Like *Eugonus*, but with the apical sinus of rostrum vestigial or absent.

1. Eugonodes brevirostris.

♀. *Eugonodes brevirostris*, Jordan, l. c. n. 130 (1904)[1].

A single ♂, which has small crests of hairs on the abdomen.

Hab. Panama, Volcan de Chiriqui (*Champion*).—Brazil, Bahia[1] (*Mus. Tring*).

XXIV. NEMOTRICHUS.

Corrhecerus, Schoenherr, Gen. Spec. Curc. v. p. 253 (1839) (partim); Lacord. Gen. Col. vii. p. 548 (1866) (partim); Gemm. & Har. Cat. Col. ix. p. 2737 (1872) (partim).

Nemotrichus, Labram & Imh. Gen. Spec. Curc. i. no. 50 (1842) (type: *indistinctus=pilicornis*); Jord. Nov. Zool. xi. p. 270 (1904).

Range: South and Central America.

♂ ♀. Rostrum at least three times as broad as long. Labium divided nearly to mentum. Antennal cavity completely covered. Eye sinuate, oblique. Frons about one-third the width of rostrum or less. Antenna very thin, with long bristles, a loose club of three segments. Carina of pronotum separate from base. Mesosternal process vertical in front, apical portion horizontal, subimpressed.

In the ♂ of some South-American species of this genus the mid coxa and femur are provided with combs of flat triangular spines. The abdomen of the ♂ is depressed mesially and more or less villose, while in certain species the pygidium is mucronate in this sex. The mid tibia bears sometimes an apical spine in the ♂.

a. Carina of prothorax evenly rounded laterally . . . . . *b*.
Carina of prothorax forming an angle of 90° with the lateral carina . . . . Species No. 1.

b. Metasternum coarsely punctured at the sides . . . . . *c*.
Metasternum not punctured; under and upper sides greyish-white; elytra with M-shaped black spot on suture in middle . . . . . Species No. 6.

c. Tibiæ with black basal ring which is interrupted on upperside; apex of mid and hind tibiæ grey on upperside . . . . . Species No. 5.
Tibiæ without black basal ring; apical half or two-thirds of tibiæ black-brown . *d*.

d. Pronotum with slightly interrupted grey mesial vitta . . . . . Species No. 2.
Pronotum with small subapical spot and larger postmedian one, otherwise minutely speckled with luteous-grey . . . . . *e*.

e. Middle tibia of ♂ without apical tooth; apical declivity of elytra very much denser pubescent clayish-grey than middle, or the brown central area reduced to a sutural spot . . . . . Species No. 4.
Mid tibia of ♂ armed with an apical spiniform tooth; apical declivous portion of elytra hardly more densely irrorated with luteous-grey than middle. Species No. 3.

1. **Nemotrichus angulatus**, sp. n. (Tab. XII. fig. 27.)

♂ ♀. Brownish-black, head and pronotum sparsely irrorated with luteous-grey; prosternum more densely speckled, rest of underside sparsely grey or luteous-grey, marmorated and spotted with black; elytra pubescent clay-colour, minutely speckled with black, a sutural spot behind middle, two at lateral margin, one before middle, and the third before apex, and some confluent speckles on basal callosity, as well as the basal margin, black; antenna rufous, ninth segment brown; basal two-fifths of mid and hind tibiæ, basal half of fore tibia, and the tarsi rufous, pubescent clay-colour, first fore-tarsal segment brown. Frons one-third the width of the rostrum. Club of antenna strongly asymmetrical, segment 9 longer than 11, 10 more than twice as long as broad. Base of pronotum feebly bi-emarginate, carina parallel with it, forming an angle of 90° with the slightly flexuose lateral carina, the tip of the angle being rounded off. Elytra slightly depressed at suture, rounded-declivous from middle. Pygidium in ♂ feebly acuminate, in ♀ unevenly rounded at the apex, with the margin somewhat turned upwards. Abdominal segments of ♂ villose in middle, depressed.

Length $4\frac{1}{2}$–$6\frac{1}{2}$ millim.

Hab. Panama, Volcan de Chiriqui, Bugaba (*Champion*).

A series.

2. **Nemotrichus armatus.** (Tab. XII. figg. 28, 28 *a*.)

♂. *Nemotrichus armatus*, Jordan, Nov. Zool. xi. p. 267. n. 52 (1904) [1].

Hab. Nicaragua, Chontales (*Belt*: ♀); Costa Rica, San Carlos [1] (*Schild-Burgdorf*, ♂, *in Mus. Tring*).

3. **Nemotrichus teliger,** sp. n.

♂ ♀. Very close to the preceding, perhaps only a geographical form of it. Buffish-grey pubescence much more restricted; elytron irrorated with buffish-grey, generally with a conspicuous patch of grey behind the base and another before the apical declivity; apical two-thirds of all tibiæ brown; abdomen spotted with brown. Third interspace of elytron rather less elevate than in *N. armatus*. Pygidium of ♂ almost evenly rounded, with a fine mesial carina apically which ends in a small point projecting beyond the apical margin; fifth abdominal segment of ♂ convex, feebly truncate. In *N. armatus* ♂ the pygidium is more triangular, subacuminate, and the fifth abdominal segment bears at the apex two impressions separated by a thin mesial carina. The pygidium of *N. teliger* ♀ is much less turned upwards at apex than in *N. armatus* and more rounded.

Length 4–8½ millim.

Hab. Panama, Volcan de Chiriqui, Bugaba (*Champion*).

A series of each sex.

4. **Nemotrichus inermis,** sp. n. (Tab. XII. fig. 29.)

♂ ♀. In colour resembling *N. armatus* and *N. teliger*; pronotum more minutely dotted with luteous-grey, appearing almost black; apical third of elytra and often also subbasal area more densely pubescent luteous-grey, middle of sutural area more uniformly brown, sometimes the elytra clay-colour, with a brown sutural spot and an antemedian lateral one. Frons wider. Tenth antennal segment rather shorter and less extended luteous; first fore-tarsal segment less rufous beneath the grey pubescence; tibiæ coloured as in *N. teliger*. Pygidium of ♂ mucronate, ending in a prominent obtuse process, in ♀ rather longer than in *N. teliger* and nearly as much turned upwards apically as in *N. armatus*. The abdomen of the ♂ is impressed, the rather deep impression being villose, especially on the last segment. Mid tibia of ♂ without apical spine.

Length 4½–6½ millim.

Hab. Mexico, Toxpam (*Sallé*); Nicaragua, Chontales (*Belt, Janson*); Panama, Bugaba, Volcan de Chiriqui [type] (*Champion*).

Numerous examples.

5. **Nemotrichus spilotus,** sp. n. (Tab. XII. fig. 30.)

♂. Black, pubescent clay-colour, pubescence sparser beneath and greyer; four spots on occiput (the middle ones being small), some lateral spots on pronotum and five on disc, of these five two standing behind apical margin and two at base, whilst the fifth (which is lyre-shaped, but interrupted) is placed before the carina, a small spot on basal callosity of elytron, two spots in and behind middle accompanied by some minute dots, a large patch of dots before apex, a small lateral spot at shoulder, a large one before middle and a small one behind middle of lateral margin, three spots on pygidium or two spots and a mesial vitta, and a row of rounded lateral spots on abdomen, black; underside of tibiæ black, this colour occupying also apical third of fore tibia, forming a dorsally-interrupted basal ring on all tibiæ, and extending more or less on to upperside in apical third of mid and hind tibiæ; tarsi brown, first segment pubescent grey; last two segments of antenna luteous.

Similar in shape to *N. barbicornis*, F. (1801); lateral carina of prothorax shorter; elytra more deeply striate;

pygidium (of ♂) not mucronate, being very feebly acuminate; sides of prosternum coarsely punctured. Abdomen (♂) mesially depressed and villose; last segment with a very deep rounded apical cavity.

Length 6½–8 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Two males.

6. **Nemotrichus dorsomaculatus.**

Corrhecerus dorsomaculatus, Jekel, Ins. Saund. i. p. 134 (1855) [1]; Gemm. & Har. Cat. Col. ix. p. 2737 (1872) [2].

Corrhecerus leucomelas, iid. l. c. [3].

The two specimens in the collection agree very well with South-American *N. dorsomaculatus*, but have a little less evenly pubescent grey upperside.

Hab. NICARAGUA, Chontales (*Belt*, *Janson*).—SOUTH AMERICA, Cayenne [1 2 3].

XXV. CORRHECERUS.

Anthribus, subgen. *Corrhecerus*, Schoenherr, Curc. Disp. Meth. p. 40 (1826) (type: *flaccidus*, Gyll., ="*mixtus*, Germ.," false) [1].

Corrhecerus, Schoenherr, Gen. Spec. Curc. i. p. 127 (1833) [2]; Lacord. Gen. Col. vii. p. 548 (1866) (partim) [3]; Gemm. & Har. Cat. Col. ix. p. 2737 (1872) (partim) [4]; Jordan, Nov. Zool. xi. p. 271 (1904) [5].

Range: South and Central America.

♂ ♀. Differs from *Nemotrichus* especially in the pronotal carina being basal.

The genus is purely American, like *Nemotrichus*. Seven species are known, one only having been discovered in Central America. Schoenherr, when describing the "subgenus" *Corrhecerus*, gave as type *Anthribus mixtus*, Germ., adding "plures species non vidi." As the only species described [2] as being contained in his collection is *flaccidus*, it appears to me to be evident that he originally mistook this *flaccidus* for Germar's *mixtus*, *flaccidus* therefore being the type of *Corrhecerus*.

1. **Corrhecerus belti,** sp. n.

♂. Close to *C. hector*, Jekel (1855), from the Amazons. Shorter. Basal angle of prothorax feebly but distinctly produced backwards, angle of carina 90°, with the extreme tip only rounded off, lateral carina continued to near apical constriction, but the anterior additional portion less elevate than the rest; side of prothorax more evenly rounded in middle. Suture of elytra distinctly depressed from middle to apex. Pygidium almost evenly rounded; the mesial double carina reaching close to apical edge. Mesosternal process more rounded in lateral aspect, the lateral apical margin not being horizontal but somewhat slanting.

The specimen described, which is somewhat abraded, shows also some differences in colour. The pubescence is more clayish above, the small black markings of the elytra and the black lateral dots of the abdomen are larger, and the second tarsal segment is almost completely pubescent brown.

Length 9 millim.

Hab. NICARAGUA, Chontales (*Belt*).

One male.

XXVI. PHÆNITHON.

Anthribus, Fabr. Syst. Eleuth. ii. p. 407 (1801) (partim).
Anthribus subgen. *Phænithon*, Schoenherr, Curc. Disp. Meth. p. 37 (1826) (type: *costatus*).
Phænithon, Schoenherr, Gen. Spec. Curc. i. p. 158 (1833); Lacord. Gen. Col. vii. p. 550 (1866); Gemm. & Har. Cat. Col. ix. p. 2737 (1872).
Camaroderes, Jekel, Ins. Saunders. i. p. 85 (1855) (type: *viduus*).

Range: South and Central America; numerous species.

♂ ♀. Rostrum very short, marginate, sharply sinuate at apex; labium heart-shaped, sinus not extended as far as the insertion of the palpi. Eye large, sinuate. Antennal groove triangular, prolonged downwards; antenna short, shaft less than twice the length of the club, which consists of three segments, sometimes hardly longer than the club. Carina of pronotum strongly rounded laterally.

The members of this genus are mostly short stout insects, but some of them are elongate and resemble somewhat certain species of *Gymnognathus*. The two genera, however, cannot be confounded, the strongly sinuate eye and the very short rostrum distinguishing *Phœnithon* at a glance.

Key to the Central-American Species.

a.	Pygidium variegated or clay-colour	*b.*
	Pygidium uniformly grey or white, sometimes with vestiges of two brown dots	*h.*
	Pygidium orange; elytron blue	Species No. 16.
b.	Sides of elytron and body dotted or marmorated	*c.*
	Sides of elytron and body not dotted or marmorated	*f.*
c.	Elytra flattened at suture, with black sutural patch or brown transverse band.	*d.*
	Elytra not depressed at suture, without black patch or brown band	*k.*
d.	Pronotum with well-defined black basal patch on each side; sutural patch of elytra round	Species No. 6.
	Pronotum without distinct black basal patch	*e.*
e.	Pronotum with grey or clayish-ochraceous mesial vitta, sides dotted	Species No. 1.
	Pronotum brown in centre, grey or ochraceous at sides and base	Species No. 2.
	Pronotum with two brown irregular vittæ	Species No. 4.
f.	Pygidium uniformly clay-colour	Species No. 5.
	Pygidium white, with sharply defined black spot at sides	Species No. 3.
	Pygidium with brown mesial patch	Species No. 9.
	Pygidium with grey mesial line	*g.*
g.	Mesial vitta of pronotum complete	Species No. 7.
	Mesial vitta of pronotum short	Species No. 8.
h.	Suture impressed	Species No. 5.
	Suture not impressed	*i.*
i.	Side of pronotum grey, with one or two brown dots	*j.*
	Side of pronotum with a grey and a brown vitta	Species No. 11.
j.	Occiput with sharply defined, broad, grey mesial vitta	Species No. 10.
	Occiput with thin grey mesial line or irrorated with grey	Species No. 12.
k.	Abdomen with round brown spots at sides	Species No. 13.
	Abdomen dotted with luteous-grey at sides	Species Nos. 14, 15.

1. Phænithon curvipes.

Anthribus curvipes, Germar, Ins. Spec. Nov. p. 176 (1824) [1].
Phænithon costatus, Boheman, in Schoenh. Gen. Spec. Curc. i. p. 158. n. 1 (1833) [2].
Phænithon curvipes, Gemm. & Har. Cat. Col. ix. p. 2738 (1872) [3].

A common species. The fore tibia of the ♂ is prolonged and curved. While the pygidium is rounded in the ♂, it is sinuate in the ♀, like the anal sternite.

Hab. Mexico, Toxpam, Santecomapan (*Sallé*), Misantla (*Höge*); Guatemala, Panzos (*Conradt*), Tamahu, El Reposo, San Isidro, Las Mercedes, Torola (*Champion*); Nicaragua, Chontales (*Belt*); Costa Rica; Panama, Bugaba, Volcan de Chiriqui, Tolé (*Champion*).—South America [1 2 3], from Colombia to Southern Brazil.

2. Phænithon plagiatus.

Phænithon plagiatus, Boheman, in Schoenh. Gen. Spec. Curc. i. p. 159. n. 2 (1833) [1]; Gemm. & Har. l. c. (1872) [2].

The pygidium of the species which I believe to be *P. plagiatus* is mucronate in the ♂, rounded in the ♀; the anal sternite of the ♀ is truncate-sinuate.

Hab. Mexico, Toxpam, Playa Vicente, Juquila (*Sallé*); Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui (*Champion*).—Brazil [1 2].

3. Phænithon championi, sp. n. (Tab. XIII. fig. 12.)

♂ ♀. Black, irrorated with dispersed, scale-like, white hairs, marked with creamy-white: a broad vitta on rostrum, separating on head into two lines bordering the eyes and being continued as broad and somewhat irregular vittæ to the basal angles of the pronotum, where they curve towards the middle; a hammer-shaped basal medial spot on pronotum often preceded by a dot; a bracket-shaped basal mark on each elytron, open behind, expanding between scutellum and shoulder, separate from or continuous with a short sutural streak, which itself touches, or is continuous with, a round spot which stands a little separate from the suture; obliquely behind this spot another round spot of smaller size, occasionally separated into two minute dots; at apex an oblique club-shaped spot, sometimes with a minute dot at its outer side, some specimens with a small median spot in the eighth interspace; all these markings creamy-white, like the pygidium, which bears on each side a conspicuous round black spot: lower apex of mesosternal epimeron, side of metasternum (except two spots) and a lateral stripe on abdomen, the greater portion of mid and hind femora, two-thirds of the mid tibia and more than half of the hind tibia, as well as two-thirds of the first tarsal segments, pubescent creamy-white; the broad abdominal vitta isolating small round lateral spots, the white pubescence occupying the fourth segment entirely and the third almost entirely; the middle of the sterna more or less pubescent white.

Occiput and frons with a thin but very distinct mesial carina, which becomes vestigial on the rostrum. Prothorax almost twice as broad as long, impressed in middle before carina, which is biconvex, and depressed at apex, especially in ♂. Elytron slightly depressed at suture, evenly convex behind, with very fine stripes of punctures. Pygidium subemarginate in ♂, evenly rounded in ♀. Prosternum impressed in middle. Process of mesosternum somewhat concave at apex, with the angle projecting. Abdomen of ♂ depressed mesially, anal segment impressed, emarginate; this segment emarginate also in ♀.

Length 8–10 millim.

Hab. Guatemala, San Gerónimo (*Champion*).

Four males and two females. A third female from Mexico, Jalapa (*Höge*), differs somewhat in pattern, the white pubescence before the base of the pronotum being

more extended along the carina and the markings of the elytra smaller; the black spots on the pygidium are also larger. This specimen represents perhaps a Mexican subspecies.

4. **Phænithon pollux,** sp. n. (Tab. XIII. fig. 11.)

♀. Black; femora and bases of tibiæ rufescent; dark parts of upperside deep brown, light parts luteous-grey or clay-colour, as follows: a broad mesial vitta on rostrum and head, covering the whole frons; the whole pronotum, except two irregular brown vittæ which include some grey dots before middle and some lateral brown speckles; the scutellum; the elytra, with the exception of an irregular transverse median band which divides at the sixth stripe of punctures into two bands—one running obliquely towards shoulder which it does not reach, and the other obliquely backwards to outer margin,—both branches including grey or clayish speckles, the elytra bearing, moreover, a number of brown dots on suture, the one behind scutellum being the largest, three dots at basal margin, namely, one at scutellum, another halfway to shoulder, and the third below shoulder, besides a large patch on basal callosity; pygidium unevenly pubescent; underside (with the exception of numerous brown specks on the prosternum, two dots on the metasternite, and a row of minute lateral spots on the abdomen), tibiæ and first tarsal segments (except their apices), and femora, luteous white.

Frons slightly concave, with the vestige of a channelled mesial carina. Prothorax not quite so broad as long, feebly depressed before carina, the latter somewhat concave in middle. Elytra rather strongly striped, the interspaces more or less convex, especially the third. Pygidium rounded at apex, anal sternite emarginate. Prosternum depressed in middle. Mesosternal process with the angles very slightly tuberculiform.

Length 8–10 millim.

Hab. Mexico, Toxpam (*Sallé*).

Two females.

5. **Phænithon castor,** sp. n. (Tab. XIII. fig. 13.)

♀. Very similar to the preceding insect. Rostrum shorter, being twice as broad at base as long. Pronotum deeply impressed before base and depressed behind apical margin, vittæ sharply defined, a small brown lateral dot present at apical margin; carina more deeply concave in middle. Elytra more broadly depressed at suture, much more finely striate-punctate; a large luteous patch extending from base to middle, reaching to shoulders at basal margin, sinuous at the sides, irregularly truncate behind, including a brown dot behind scutellum; a round luteous apical patch on each elytron including each a brown dot, a luteous, irregularly triangular limbal spot just before middle. Pygidium and sides of under surface more evenly pubescent luteous; a spot laterally at apical margin of pronotum, two on episternum of metasternite, and one each on second and third abdominal segments, brown; the luteous pubescence of abdomen rather sharply limited, forming a lateral spot on fourth segment. Prosternum shorter than in *P. pollux*, being only two-thirds as wide before the coxa as the coxa itself. Process of mesosternite vertical, with the apex less slanting than in *P. pollux*. First fore tarsal segment shorter.

Length 9 millim.

Hab. Mexico, Toxpam (*Sallé*).

One female.

6. **Phænithon discifer,** sp. n. (Tab. XIII. fig. 14.)

♀. Black, upperside irregularly irrorated with clay-colour, underside dotted with luteous-grey, the dotting dense and well-defined at side, middle more evenly grey; two basal spots on pronotum and a large rounded sutural patch on elytra velvety-black, sharply defined, more or less bordered with luteous

pubescence; rostrum with grey mesial vitta, which is represented on head by a narrow and irregular mesial streak; an indication of a mesial vitta also on pronotum.

Rostrum twice as broad at base as mesially long. Occiput longitudinally wrinkled, with a very thin mesial carina. Pronotum nearly twice as broad as long, feebly depressed behind, carina concave in middle. Elytra short, depressed at suture, lines of punctures impressed; interspaces somewhat convex, especially the third and fifth before apex; basal and humeral callosities rather distinct. Pygidium not longer than basally broad, rounded at apex; anal sternite emarginate. Prosternum as long before coxa as the latter is wide.

Length $8\frac{1}{2}$–$9\frac{1}{2}$ millim.

Hab. NICARAGUA, Chontales (*Janson*).

Two females.

7. **Phænithon gravis.**

Phænithon gravis, Fåhr. in Schoenh. Gen. Spec. Curc. v. p. 262. n. 7 (1839) [1].

The Costa Rican and Panama examples are more slender than South-American specimens of *P. gravis*. The vittæ of the pronotum are narrower, and the pygidium is very narrowly bordered with grey, bearing also a very narrow grey mesial stripe.

Hab. COSTA RICA (*Biolley*); PANAMA, Volcan de Chiriqui (*Champion*). — SOUTH AMERICA, Colombia, Venezuela, Brazil [1], Bolivia (*Mus. Tring*).

The mid tibia of the ♂ of this species bears a tooth at the tip and the anal sternite is deeply impressed at the apex.

8. **Phænithon bajulus.**

Phænithon bajulus, Jekel, Ins. Saund. i. p. 142 (1855) [1].

One ♂ only. This sex of *P. bajulus* possesses a remarkable structure on the abdomen: there are on each of the second and fourth segments two tubercles composed of hard black glossy spines, which remind one of the spines found on the mid coxa and femur of the males of some species of *Nemotrichus* and on the mesosternum of *Habrissus*.

Hab. PANAMA, Volcan de Chiriqui (*Champion*). — SOUTH AMERICA, Colombia, Cayenne [1], Amazons, Bolivia.

9. **Phænithon uncinatus,** sp. n.

♀. Resembling *P. bajulus*, but smaller. Pronotum much shorter, being half as broad again as long, with three broad luteous vittæ, the mesial one narrowing to a point in front, the lateral vitta oblique, more lateral than in *P. bajulus*, reaching base of pronotum at angle; carina slightly curved forward at sides, the lateral carina being practically absent. Elytra more cylindrical than in *P. bajulus*, pattern different; a narrow grey sutural vitta from base to middle, continued along basal edge to shoulder, then running backwards halfway to middle; posteriorly the sutural vitta curved sideways to the fifth interspace, where it touches a curved line which extends from before the middle of the limbal edge to the fifth interspace, ending in this interspace before the apical declivity; an irregularly ovate apical spot luteous, neither touching sutural nor apical edges. Pygidium longer than broad, with a broad grey vitta on each side which becomes gradually narrower apically; no grey mesial line. Tarsi much longer than in *P. bajulus*, the fore tarsus being longer than the fore tibia; femora and bases of tibiæ bright rufous.

Length $4\frac{1}{2}$ millim.

Hab. NICARAGUA (*Boucard, in Mus. Tring*).

One female.

10. **Phænithon nigritarsis.** (Tab. XIII. fig. 15.)

Phænithon nigritarsis, Jordan, Nov. Zool. xi. p. 294. n. 110 (1904) [1].

The white markings of the upperside are not quite constant in size.

Hab. Mexico, ?Sierra de Durango [1] (*Mus. Tring*), Toxpam, Juquila (*Sallé*); Guatemala, San Gerónimo (*Champion*); Costa Rica [1] (*Mus. Tring*).

11. **Phænithon jucundus,** sp. n. (Tab. XIII. fig. 16.)

♂ ♀. Somewhat resembling *P. nigritarsis* in size and shape. Frons much narrower, being less than half the width of the rostrum, clayish pubescence of occiput and hinder part of frons restricted to two vittæ bordering the eyes. Pronotum less convex than in *P. nigritarsis*, lateral carina extended beyond middle; two dorsal luteous vittæ, constricted in middle, and a short mesial basal vitta, connected with each other and with the pubescent grey sides along the carina, which is subbasal, standing nearer the basal edge than in *P. nigritarsis*. Elytra grey at basal edge, this pubescence extending backwards along suture to middle, the posterior half of the vitta dilated, this dilated portion produced straight laterad behind the feeble basal callosity towards a short vitta which is situated in the sixth interspace; from the hinder part of the sutural patch there runs on each elytron a thin oblique angular line backwards and sidewards, nearly reaching a small limbal postmedian spot; an apical patch on each elytron rounded towards sutural angle, subtruncate towards disc; a small double spot laterally before middle; these markings grey or luteous. Pygidium and under surface uniformly greyish-white, the former rounded at apex. Prosternum subvertical before coxæ, this portion about one-third the width of the coxa. Mesosternal process truncate, with the angles rounded. Abdomen feebly flattened mesially in ♂, the last segment deeply impressed, short, rounded; last segment of ♀ rufescent, longer than segments 2 to 4 together, slightly sinuate. Legs rufescent, thinly pubescent white, apices of tibiæ and the tarsi black, fore and mid tarsi more or less thinly pubescent white above; first tarsal segment more than half the length of the tibia.

Length 4–5 millim.

Hab. Panama, Bugaba (*Champion*).

One male and eight females.

12. **Phænithon semigriseus.**

Anthribus semigriseus, Germar, Ins. Spec. Nov. p. 177. n. 294 (1824) [1].

Phænithon semigriseus, Gyll. in Schoenh. Gen. Spec. Curc. i. p. 162. n. 5 (1833) [2]; Fåhr. ibid. v. p. 265. n. 12 (1839) [3].

This and *P. costatus* are the commonest species of *Phænithon*. Variable in the amount of grey pubescence on the upperside, the elytra sometimes irrorated all over with grey (*P. inconditus*, Fåhr.). Mid and hind tibiæ with a small but distinct apical spur in ♂. First segment of all tarsi white, except the tip. Anal sternite of ♂ not impressed, of ♀ emarginate.

Hab. Mexico, Toxpam, Santecomapan, Playa Vicente (*Sallé*), Dos Arroyos in Guerrero (*H. H. Smith*); Guatemala, Panzos in Vera Paz (*Conradt*), Chacoj and San Gerónimo in Vera Paz, San Isidro, Las Mercedes, Torola (*Champion*); Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui (*Champion*).—South America to Brazil [1 2 3], Bolivia, Peru, and Paraguay (*Mus. Tring*).

A series.

13. **Phænithon leucospilus,** sp. n. (Tab. XIII. fig. 17.)

♂ ♀. Black, upperside pubescent brown, very densely irrorated with white, without regular pattern: underside white; two irregular lateral spots each on prosternum and on metasternal episternum, a round lateral dot on the first three abdominal segments and a vestigial dot on the fourth brown; apices of tibiæ and the tarsi brown or black, first tarsal segment white above except at tip, the black tip widest on hind tarsus.

Rostrum nearly three times as broad as long. Frons evenly but slightly convex, without carina. Pronotum convex, feebly depressed along carina, which is slightly concave in middle. Elytra short, cylindrical, hardly depressed at suture, finely striate-punctate. Pygidium longer than basally broad in ♂, hardly as long as broad in ♀, and more evenly rounded at apex than in ♂. Antecoxal portion of prosternum subvertical, about one-third the width of the coxa. Mesosternal process rounded at apex, with the lateral angles distinct. Abdomen of ♂ flattened mesially: last segment impressed, feebly emarginate; fourth segment with two small apical luteous tufts; anal segment of ♀ a little longer than third and fourth together, subtruncate, not emarginate.

Length 4 millim.

Hab. Mexico, Toxpam (*Sallé*).

Two males and one female. Nearest to *P. albosparsus*, Labr. & Imh. (1842), from South America.

14. **Phænithon pardalis,** sp. n. (Tab. XIII. fig. 18.)

♀. Dark brown, upperside and flanks almost evenly dotted with luteous-grey, middle of underside grey; legs rufescent, especially the tibiæ, pubescent grey, a basal spot or ring on tibiæ and the tip of hind tibiæ brown, tarsi also brown, first segment of hind tarsus grey.

Rostrum about three times as broad as long. Frons half the width of the rostrum. Prothorax twice as broad as long, carina nearly basal, concave in middle, lateral angle very little over 90°, the lateral carina vestigial from base to near apex; an interrupted mesial stripe. Elytra evenly convex, slightly flattened behind at suture, finely punctate-striate, base and side less densely dotted with back. Pygidium broader than long, rounded, with the apex feebly rotundate-angulate in middle. Mesosternal process very broad, truncate. Anal sternite short, feebly emarginate.

Length $3\frac{1}{2}$ millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One female.

15. **Phænithon brevicornis.**

Anthribus brevicornis, Say, Descr. N. Amer. Curc. p. 4. n. 2 (1831) [1]; id. Complete Writings, i. p. 262 [2].

Hab. Mexico [1 2].

Not known to me.

16. **Phænithon cæruleus,** sp. n. (Tab. XIII. fig. 19.)

♀. Thinly pubescent grey; upperside (except pygidium), prosternum, and underside of head metallic-blue, rest of underside, pygidium, legs, and mouth-parts ochraceous-rufous, shaft of antenna rufescent; a broad ill-defined antemedian band on elytra purple, with the pubescence brownish.

Rostrum more than four times as broad as long. Frons half the width of the rostrum, with vestigial mesial carina. Prothorax twice as wide as long, carina subbasal, parallel to basal edge, obtusely angulate in middle, lateral angle less rounded than usual, lateral carina short, but the side of the prothorax not

evenly convex, the notum forming a rather distinct angle with the sternite, therefore the side appearing subcarinate. Elytra evenly convex, not depressed at suture. Pygidium rounded, somewhat broader than long. Anal sternite emarginate.

Length $2\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One female. The only metallic species known to me.

XXVII. EUGONOPS.

Eugonops, Jordan, Nov. Zool. xi. p. 285 (1904) (type: *germaini*).

More elongate than *Ormiscus*. Upper edge of antennal cavity cariniform, extending from apex of rostrum close to eye. Rostrum narrowed at base. Eye much longer than broad. Carina of prothorax very strongly curved, being almost basal in middle.

Two species from South America (Brazil and Bolivia) are described (*l. c.*), a third being now added from Central America. They are very prettily coloured for Anthribidæ, their pattern being somewhat after the style of that of the Cleridæ.

1. **Eugonops championi**, sp. n. (Tab. XIII. fig. 20.)

♀. Black, pubescent whitish-grey, marked with black, white, and pale yellow. Rostrum rufescent, nearly twice as broad as long. Frons not quite half the width of the rostrum. Antenna rufous at base, rufescent in middle, club black. Prothorax nearly as long as broad, convex, densely punctate-granulate, on each side with a pale yellow patch at apex and a black spot at base; carina less curved forward dorso-laterally than in the other two species of the genus (Nov. Zool. xi. 1904, p. 285). Elytra subcylindrical, punctate-striate, base black, this black area extending to near middle of lateral margin, bordered with white, also a pale yellow patch behind it on disc, a white line along basal edge curving backwards at scutellum and running along suture close to hinder edge of black area, this basal line laterally stopping above shoulder, behind shoulder another transverse white line, short, apex of elytra pale yellow. Pygidium nearly semicircular. Meso-metasterna black at sides, marked with white. Legs rufous, femora black in middle, tarsi brown, except base.

Length $2\frac{1}{3}$ millim.

Hab. GUATEMALA, Volcan de Atitlan (*Champion*).

One female.

XXVIII. CYBOSOMA, gen. nov.

♀. Close to *Ormiscus*, Waterh. (1845). Eye subglobular, sinus small. Carina of pronotum distinctly separate from base. Pygidium twice as long as broad; anal ventral segment of abdomen truncate-emarginate. First segment of fore tarsus less than twice as long as apically broad.

Type: *C. grande*, sp. n.

One species.

1. **Cybosoma grande**, sp. n. (Tab. XIII. figg. 21, 21 *a*.)

♀. Brown-black, densely pubescent olive above, marmorated with white, lines of punctures of elytron white; under surface greyish-white, rather faintly spotted with olive-clay at sides. Rostrum one-third broader than long, coarsely punctate-rugate, with ill-defined smooth mesial line. Head rugulose, subreticulate; frons very broad, two-thirds the width of the rostrum, nearly flat. Anterior lobe of eye very much

smaller than posterior. Antenna short, rufescent; club brown, twice as long as broad; eighth segment nearly as long as seventh, wider.

Prothorax one-third broader at carina than long, strongly narrowed from carina to apex; very little rounded, disc punctate-rugate, markings forming more or less transverse bands; carina very strongly concave but remaining well separate from base, forming at sides a regularly curved hook, not being angulate. Scutellum white, longer than broad. Elytra short, almost square, a little wider at shoulders than prothorax, punctate-striate, depressed at suture; third and seventh interstices partly costate, a high conical tubercle near base in third interspace, followed by a minute one, seventh interspace with another, less high, tubercle before the subvertical apex. Legs grey, dotted with olive, especially the tibiæ, first tarsal segment shorter than fourth.

Length $5\frac{1}{2}$ millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Eight females. A ninth specimen (♀) from the same place is much smaller than the others, measuring only $3\frac{1}{2}$ millim. in length.

XXIX. ORMISCUS.

Ormiscus, Waterhouse, Ann. & Mag. Nat. Hist. xvi. p. 37 (1845) (type: *variegatus*).
Hormiscus, Gemm. & Harold, Cat. Col. ix. p. 2738 (1872).
Entomops, Gemm. & Harold, l. c. (Jekel, MS.).
Toxotropis, Leconte, Proc. Amer. Phil. Soc. xv. p. 397 (1876) (type: *pusillus*).
Gonops, Leconte, l. c. p. 398 (1876) (type: *fissunguis*).

Range: America; numerous species.

♂ ♀. Eyes sinuate; frons much narrower in ♂ than in ♀. Carina of pronotum subbasal, more or less deeply concave, either abruptly ending laterally at angle or flexed forward in front of or below the angle. Mid tibia of ♂ armed at apex with a mucro, or a black ridge which bears a comb of short spines at the edge. Tooth of claw large.

The species are all small and difficult to distinguish. It will be relatively easy to group them when the males of all the species are available for examination, as the armature of the mid tibia of this sex affords good distinguishing characters. So far, the males of only twelve of the twenty-one Central-American species are known to me; they can be grouped as follows:—

A. Mid and hind tibiæ with mucro: *costifrons*, *æqualis*, *elegans*, and *nanus*.
B. Mid tibia with, hind tibia without, mucro: *pardus*, *subtilis*, and *æneus*.
C. Mid tibia dilated at apex into a black ridge or lobe: *lateralis*, *laticollis*, *calus*, *stratus*, and *pusillus*.

Key to the Central-American Species.

a.	Carina of prothorax not abruptly ending at sides but flexed forward, forming a short and usually very thin longitudinal carina situated in front of or beneath the lateral subbasal angle of the thorax	*b.*
	Carina abruptly ending at sides, either at the subbasal angle of the thorax or beneath this angle, in the latter case being continued downwards for a little distance	*f.*
b.	First fore tarsal segment about twice as long as apically broad. Elytra strongly depressed at suture, interspaces 3 and 5 much broader than 4 . .	Species No. 1.
	First fore tarsal segment about thrice (or more) as long as apically broad . .	*c.*

c. Elytra flattened at suture, subrectangular, about one-third longer than broad, third interspace subcostate, basal callosity distinct; ♂ with acute apical mucro on mid and hind tibiæ . . . . . Species No. 3.
As before, but third interspace not elevate, basal callosity vestigial . . . . Species No. 4.
Elytra proportionally longer, not much flattened at suture; mid tibia of ♂ dilated at apex, hind tibia without pointed mucro . . . . . *d.*
Elytra subcylindrical, very coarsely striate-punctate, the punctures being at least as large as the interspaces between the rows; lateral, longitudinal carina of prothorax indistinct on account of the coarse puncturation; mid and hind tibiæ of ♂ with apical mucro: a small black species . . . . . Species No. 16.
d. Elytra with large blackish-brown lateral patch . . . . . Species No. 7.
Elytra with a brown band or patch across suture . . . . . *e.*
e. Elytra rufous, pubescent-grey, with brown median band: length (head excluded) $1\frac{2}{3}$ mm. . . . . Species No. 11.
Elytra brown, irregularly spotted with grey, a brown sutural space before middle, a conspicuous grey dot in third interspace behind the brown space: length $2\frac{1}{3}$ mm. . . . . Species No. 6.
Like Species No. 6, but the brown sutural space prolonged backwards . . . Species No. 5.
Uniformly metallic dark green above, sparsely pubescent-grey; mid tibia of ♂ with acute mucro, hind tibia simple. . . . . Species No. 13.
f. Elytron testaceous, with a lateral patch before middle and a larger dorsal patch behind middle black; mid and hind tibiæ of ♂ mucronate, first hind-tarsal segment longer than tibia . . . . . Species No. 9.
Elytra rufous, pubescent-grey, sides from shoulder to apex, a large basal sutural area and a subapical sutural patch black, irregularly defined, suture blackish; frons of ♂ half the width of the rostrum, mid tibia acutely mucronate . . Species No. 10.
Elytra black, with sparse grey spots . . . . . *g.*
Elytra otherwise coloured . . . . . *h.*
Apex of elytra densely grey and luteous, bordered in front by a black band; basal callosity prominent . . . . . Species No. 2.
g. Tibiæ black . . . . . Species No. 16.
Tibiæ rufous in middle . . . . . Species No. 17.
h. Pronotum and elytra with sharply defined greyish-white dots, a prominent greyish-white basal sutural spot, usually anchor-shaped; carina of pronotum practically basal; eye very strongly convex . . . . . Species No. 19.
Upperside almost uniformly pubescent-cinnamon; punctures of elytron fine, the stripes hardly impressed; antennal segment 3 half as long again as 4, segments 7 and 8 subglobular (♀) . . . . . Species No. 18.
Upperside spotted with fulvous; first fore tarsal segment about twice as long as apically broad . . . . . Species No. 1.
Pronotum and elytra otherwise coloured . . . . . *i.*
i. Frons of ♀ less than half, of ♂ less than one-third, the width of the base of the rostrum; pronotum twice as broad behind as in front, with the sides of the apex uniformly grey; mid tibia of ♂ dilated at tip, hind tibia simple. A broad species . . . . . Species No. 8.

Frons of ♀ more than half the width of the base of the rostrum . . . . . *j*.

j. Prothorax only slightly narrowing from carina to middle, elytra cylindrical . *k*.
Prothorax more or less constricted in front of carina, the latter projecting laterad . . . . . *l*.

k. Elytra irregularly banded transversely with grey and brown, or spotted with grey . . . . . Species Nos. 14 and 15.
Elytra each near suture with a brown patch at base and another behind middle . . . . . Species No. 12.

l. Carina of pronotum parallel to basal edge . . . . . *m*.
Carina of pronotum laterally farther away from basal edge than in middle; elytra with large brown sutural patch in middle . . . . . Species No. 18.

m. Elytra each with four blackish patches along the suture from base to apex, the patches more or less connected across the suture . . . . . Species No. 20.
Elytra without these patches, the third only being indicated . . . . . Species No. 21.

1. **Ormiscus pardus,** sp. n. (Tab. XIII. fig. 22.)

♂. Black, upperside covered with numerous ochraceous dots, between which the black ground-colour forms a rather sharply defined network; underside ochraceous-clay at sides, pale clay in the middle. Rostrum nearly three times as broad as long, broadly emarginate at apex, coarsely punctate-rugate. Head rugate-granulate; frons less than half the width of the rostrum. Anterior lobe of eye only a little larger than posterior. Antennæ rufous, club brunnescent, its segments closely applied to one another.

Prothorax punctate-granulate, half as broad again as long, strongly convex, obliquely rounded at sides; carina antebasal, not deeply concave, projecting laterad at side, not distinctly curved forward at this angle. Scutellum grey, a little broader than long. Elytra a little narrower than prothorax, short, flattened, gradually narrowed from shoulders to apical declivity, each gibbose on back near base, transversely depressed behind this gibbosity, also depressed along suture, punctate-striate, the punctures rather large, alternate interstices somewhat convex, third and seventh subcostate. Pygidium a little longer than broad, evenly rounded at apex, entirely ochraceous. Legs rufous, spotted with ochraceous, femora and claw-segments brownish; mid tibia with short apical spur.

Length $2\frac{2}{3}$ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One male.

2. **Ormiscus tigrinus,** sp. n. (Tab. XIII. fig. 23.)

♀. Black-brown, pubescent luteous-grey; underside uniform in colour, upperside variegated with whitish-grey and brown. Antennæ rufous at base. Prothorax half as broad again as long, with the sides somewhat rounded, three transverse brown bands on disc, separated into spots laterally, first band straight in middle, subapical, second median curved backwards in middle, third before carina thin, interrupted in middle and also curved backwards; carina subbasal, parallel to basal margin of elytra, hardly farther from basal edge at sides than in middle. Scutellum grey. Elytra narrower at base than prothorax, short, flattened above, depressed at suture, especially posteriorly, basal callosity tuberculiform, marked with a blackish spot, brown spots more or less transverse, declivous apex subvertical, grey, this grey area bordered in front by a brown band-like space which is widened forward at suture. Pygidium luteous-grey. Legs rufous, middle of femora and apices of tibiæ and of tarsal segments brunnescent.

Length $2\frac{2}{3}$ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One female.

3. **Ormiscus costifrons.**

Ormiscus costifrons, Jordan, Nov. Zool. xi. p. 289. no. 99 (1904) [1].

♂ ♀. One of the commonest species of the genus in Central America. The unique type-specimen was described as having the frons multiplicate. On renewed examination I find that the ridges are due to the hairs of the pubescence, which has doubtless been wet, being matted together in stripes.

The pronotum, which is rufescent at the apex, bears a short, thin, lateral carina which extends horizontally forward from the end of the dorsal carina. The elytra are depressed, with the alternate interstices convex and pustulated with brown, third and seventh interstices subcostate, basal callosity of third prominent, tuberculiform. Scutellum luteous. Mid and hind tibiæ of ♂ with acute mucro.

Hab. MEXICO, Paso del Macho (*Höge*), Amatan [1] in Chiapas; GUATEMALA, Quezaltenango, Cerro Zunil, Capetillo, Guatemala City, San Gerónimo (*Champion*).

A series.

4. **Ormiscus æqualis,** sp. n. (Tab. XIII. fig. 24.)

♂ ♀. Similar to *O. costifrons*, brown markings less distinct; prothorax longer; elytra hardly at all depressed at suture, not pustulated, basal callosity of third interspace just vestigial, apex more evenly rounded-declivous. Scutellum grey or luteous; a similarly coloured spot contiguous with it. Mid and hind tibiæ of ♂ with apical mucro.

Length $2\frac{1}{2}$ millim.

Hab. GUATEMALA, San Gerómino (*Champion*).

One male, two females.

5. **Ormiscus stratus,** sp. n. (Tab. XIII. fig. 25.)

♂ ♀. Rufescent-brown, grey beneath, variegated with grey above; head and rostrum densely luteous-grey in ♂. Frons in ♀ half the width of the rostrum, in ♂ less than half. Antennæ rufous, club brown and shorter than segments 6, 7, and 8 together in ♂. Prothorax as long as broad, rugate-reticulate, dotted with grey, the dots more or less confluent; carina deeply concave, flexed forward at sides. Scutellum grey. Elytra somewhat flattened above, strongly declivous behind, with the suture slightly depressed, a large, subrhombiform, blackish-brown sutural patch in middle, prolonged backwards on suture, area in front of this patch denser grey, sides brown, stripes of punctures deep. Legs rufous, tarsi brunnescent at apex; mid tibia of ♂ with a black, oblique, longitudinal, rather long, finely serrate, apical ridge.

Length $2\frac{2}{3}$ millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

One pair.

6. **Ormiscus centralis,** sp. n. (Tab. XIII. fig. 26.)

♀. Somewhat similar to *O. stratus* in colour. Frons broader. Eye more globose. Antenna brown, rufescent at the joints; segment 9 hardly longer than it is broad at apex. Prothorax more strongly narrowed apicad; carina hardly at all flexed forward beneath angle. Elytra not flattened above, not depressed at suture (except at the base), cylindrical, less strongly declivous behind, tessellated with grey, a transverse blackish sutural patch in middle, separated from the blackish sides by some rather conspicuous grey dots. Legs brunnescent, basal two-thirds of tibia rufous.

Length $2\frac{1}{3}$ millim.

Hab. MEXICO, Amula in Guerrero 6000 feet (*H. H. Smith*).

One female.

7. **Ormiscus laticollis,** sp. n. (Tab. XIII. fig. 28.)

♂ ♀. Brown, light pubescent parts rufescent; head and rostrum luteous-grey; pronotum with luteous-grey dots; elytra luteous-grey tessellated and marmorated with brown, except a large lateral patch, which is almost uniformly brownish-black, extending from shoulder to apical declivity.

Rostrum nearly twice as broad as long. Frons one-third (♂) or half (♀) the width of the rostrum. Eye half as long again as broad in ♂, rather shorter in ♀. Antenna rufous at base. Prothorax nearly as long as broad in ♂, shorter in ♀, very densely granulate-rugate, oblique sides feebly rounded, carina antebasal, produced forward at sides beneath angle for a short distance. Scutellum semicircular, grey. Elytra half as long again as broad, slightly depressed at suture, punctures of stripes rather large. Pygidium irrorated with brown, broader, longer, and less rounded in ♂ than in ♀. Legs pale rufous, tip of tarsi brunnescent; first tarsal segment about half the length of the tibia, a little longer in ♂ than in ♀; mid tibia of ♂ with black apical dilatation, hind tibia with vestige of such an armature.

Length 3 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

One male, six females.

8. **Ormiscus lateralis,** sp. n. (Tab. XIII. fig. 27.)

♂ ♀. Close to *O. laticollis*; eyes a little closer together; prothorax much shorter, with a cordiform spot in middle before carina, the latter more acutely projecting laterad, its extreme end not curved forward beneath angle; elytra also much shorter, with an ill-defined brown dorsal space before apical declivity; tarsi shorter.

Length $2\frac{1}{3}$ millim.

Hab. PANAMA, Bugaba (*Champion*).

A small series of each sex.

9. **Ormiscus elegans,** sp. n. (Tab. XIII. fig. 29.)

♂. Blackish-brown, light-pubescent parts rufescent; upperside irrorated with grey pubescence, marked with black patches; underside densely grey; rostrum and frons densely clayish-grey.

Rostrum twice as wide as long. Frons nearly half the width of the rostrum. Eye long, not quite twice as long as wide, anterior lobe much smaller than posterior. Antenna rufous at base, intermediate segments brown with rufescent bases, club black. Prothorax about as long as broad, minutely granulate, with straight sides from carina forward; carina evenly concave; apex of prothorax paler than disc, sides brownish-black. Scutellum transverse, white. Elytra elongate, subcylindrical, a little flattened above, with the sides somewhat inflexed behind base, punctate-striate, alternate interstices feebly convex, a lateral patch before middle and a dorsal patch before apex brownish-black. Pygidium longer than broad. A patch at base of abdomen and another at middle of hind femora brownish-black (this pattern continuous with the antemedian patch of the elytron), rest of legs luteous, apex of the long tarsi brunnescent; mid and hind tibia with broad pointed mucro; first tarsal segment long, that of hind tarsus being longer than the tibia.

Length $3\frac{1}{3}$ millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

One male.

10. **Ormiscus subtilis,** sp. n. (Tab. XIII. fig. 30.)

♂. Brownish-black. Head and rostrum densely pubescent-grey. Frons half as wide as the base of the rostrum. Anterior lobe of eye much narrower than posterior. Antenna rufescent proximally; segment 3

not longer than 4, 9 and 11 a little longer than broad. Prothorax one-third broader than long, grey, with 4 or 5 indistinct brown spots on each side (these markings probably variable); carina deeply concave, not flexed forward laterally beneath angle; the angle projecting somewhat laterad, well separated from shoulder.

Elytra faintly depressed behind at suture, coarsely punctate-striate, black, marmorated with grey, a broad irregular fascia extending from shoulder obliquely to suture and curving laterad at apical declivity rufous, densely pubescent-grey. Pygidium as broad as long, grey. Legs brown, tibiæ and nearly the whole first tarsal segment rufous; first fore-tarsal segment a little shorter than claw, not being quite half the length of the tibia; mid tibia with acute spine-like mucro.

Length 2 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One male.

11. **Ormiscus calus,** sp. n. (Tab. XIV. fig. 1.)

♂ ♀. Brown, variegated with rufous. Head and rostrum densely pubescent-grey. Frons in ♀ half, in ♂ less than half, the width of the base of the rostrum. Apex of rostrum rufous. Eye longer than broad, anterior lobe narrow. Antennal segments 9 and 11 a little longer than broad. Prothorax more than half as broad again as long, brown, apex rufescent; an interrupted median vitta connected anteriorly and posteriorly with more or less confluent discal spots, all grey or luteous-grey; carina subbasal, less concave than in *O. subtilis*, flexed forward at sides beneath angle.

Elytra not depressed at suture, pubescent-grey, variegated with brown, a patch at each side of scutellum and a broad median band or transverse patch across both elytra brown. Pygidium uniformly grey, semicircular, a little longer in ♂ than in ♀. Legs pale rufous, femora brunnescent, first tarsal segment a little less than half the length of the tibia; mid tibia of ♂ dilated at apex, not mucronate, hind tibia simple.

Length $1\frac{2}{3}$ millim.

Hab. Guatemala, Dueñas, Capetillo (*Champion*).

A short series.

12. **Ormiscus tener,** sp. n. (Tab. XIV. fig. 2.)

♀. Close to *O. calus*, more cylindrical. Head and rostrum clay-colour, variegated with grey. Prothorax less than half as broad again as long, less strongly narrowed frontad than in *O. calus*, broad, with broad grey mesial vitta which is widened before centre, some small discal speckles also grey; carina subbasal, at sides hardly farther from basal edge than in middle, not flexed forward laterally beneath angle; angle very slightly projecting laterad.

Elytra cylindrical, grey, speckled with brown, an indistinct patch at each side of scutellum and a distinct patch just behind middle of each elytron brown, the postmedian patch extending from second to fifth interspaces. Pygidium semicircular, grey, variegated with brown. Legs brown, tibiæ rufous, apex excepted; femora rufescent.

Length $1\frac{2}{3}$ millim.

Hab. Guatemala, Guatemala City, Dueñas (*Champion*).

Four females.

13. **Ormiscus æneus,** sp. n. (Tab. XIV. fig. 3.)

♂. Ænescent, distinctly greenish on upperside, pubescence olivaceous above shaded with grey, densely grey on underside, no distinct pattern; scutellum white. Antenna rufescent at the joints of the proximal segments. Frons more than half the width of the rostrum. Prothorax a little broader than long, sides

slightly rounded in front, carina deeply concave, well separated from base. Scutellum nearly semicircular. Elytra subcylindrical, elongate, strongly striate-punctate. Pygidium as long as broad, rather strongly narrowed, rounded apicad. Tibiæ (except tip) and base of femora rufous; first tarsal segment about half the length of the tibiæ, mid tibia with short spur at apex; claw-segment of fore tarsus shorter than first segment.

Length 2 millim.

Hab. GUATEMALA, Aceituno (*Champion*).

One male.

14. **Ormiscus pusillus.**

Toxotropis pusillus, Leconte, Proc. Amer. Philos. Soc. xv. p. 398 (1876) [1].

♂ ♀. Black beneath, pubescent-grey; brown above, variegated with brown and grey. Head and rostrum uniformly grey; frons of ♀ half as wide as the rostrum, of ♂ less than half. Antenna rufous, club brown. Anterior lobe of eye much narrower than posterior. Prothorax about as long as broad, much less narrowed from the carina forward than usual in this genus, the sides remaining almost parallel to near the apex; a transverse spot close to apex and another band-like spot behind it brown, four large brown spots a little distance from carina, the lateral one nearly extending to the apex and including a grey dot, these spots doubtless variable individually; carina well separated from base, nearer the base in middle than at sides, not projecting laterad. Scutellum nearly semicircular. Elytra cylindrical, elongate, not pustulate, evenly punctate-striate, with the basal callosity just vestigial; grey spots merged together into irregular transverse bands, about seven in number, first at base. Pygidium grey. Legs brown, basal two-thirds of tibiæ and base of first tarsal segment rufous; first tarsal segment a little longer than claw-segment; mid tibia of ♂ obtusely dilated at apex, hind tibia with truncate mucro.

Hab. NORTH AMERICA, Florida [1].—MEXICO, Cerro de Plumas and Cuernavaca (*Höge*).

One pair.

15. **Ormiscus minor,** sp. n. (Tab. XIV. fig. 4.)

♀. Similar to *O. pusillus*, more coppery-brown above, grey markings smaller. Eye shorter, more rounded, more prominent. Antenna black, rufescent at base, short; eighth segment hardly longer than broad. Prothorax a little narrower, with the sides slightly more oblique; a mesial vitta and some lateral spots luteous-grey; carina nearer the base, especially in middle, than in *O. pusillus*, laterally more oblique, being almost evenly concave from side to side. Elytra shorter, apically more strongly declivous, luteous-grey pubescence much more restricted, forming more or less interrupted transverse bands; subbasal band broad, connected with basal margin of elytra by a streak in fifth interstice and another upon suture. Legs brown-black, tibiæ rufescent.

Length $1\frac{1}{2}$–$1\frac{2}{3}$ millim.

Hab. GUATEMALA, San Gerónimo and Dueñas (*Champion*).

A short series.

16. **Ormiscus nanus,** sp. n. (Tab. XIV. fig. 5.)

♂. Black, shining, sparsely pubescent brown and grey, the hairs longer than usual; the grey hairs rather more numerous on head and rostrum, on sides, at base and in middle of apex of pronotum, on and behind scutellum, in a transverse subbasal band on elytra and behind middle of the latter; pygidium covered with short grey pubescence.

Frons half the width of the rostrum. Mouth-parts luteous, except tip of mandibles. Antenna slightly

rufescent at base. Prothorax a little broader than long, very prominently reticulate, sides feebly rounded; carina not very strongly concave, but well separate from base, also in middle, feebly flexed forward at sides beneath angle. Elytra subcylindrical, very strongly striate-punctate, the punctures almost confluent. Legs feebly rufescent at the joints, practically all black; mid and hind tibiæ mucronate at apex.

Length 1 millim.

Hab. GUATEMALA, Rio Maria Linda (*Champion*).

One male.

17. **Ormiscus nigrinus,** sp. n. (Tab. XIV. fig. 6.)

♀. Brownish-black, sparsely variegated with grey above. Frons nearly three-fourths the width of the base of the rostrum. Eye small, longer than broad, anterior lobe not narrower than posterior, sinus shallow. Antenna rufescent proximally, segment 3 much longer than 4, 9 as long as broad, 10 nearly three times as broad as long, 11 broader than long, as long as 9. Prothorax half as wide again as broad, slightly narrowing from carina to near apex, rounded before middle; carina throughout well separate from basal edge, laterally very little farther from basal edge than in middle, slightly projecting laterad, not flexed forward beneath angle.

Elytra not depressed at suture, very coarsely punctate-striate, the grey pubescence a little more dense behind base, behind middle, and at apex. Pygidium semicircular. Tibiæ rufous, except at apex; first fore-tarsal segment shorter than claw-segment, one-third the length of the tibia.

Length $1\frac{2}{3}$ millim.

Hab. PANAMA, Caldera in Chiriqui (*Champion*).

One female.

18. **Ormiscus brunneus,** sp. n. (Tab. XIV. fig. 7.)

♀. Black, pubescent-cinnamon; scutellum and base of suture luteous. Frons more than half the width of the base of the rostrum. Anterior lobe of eye scarcely narrower than posterior. Antennal segment 8 as broad as long, 7 very little longer, 9 a little shorter than broad, 10 slightly shorter than 9, 11 longer than 9. Prothorax nearly twice as broad as long, strongly and almost evenly narrowed from carina to apex; carina at sides farther from basal edge than in middle, very slightly projecting laterad, not flexed forward beneath angle.

Elytra not depressed at suture, declivous from middle, apical declivity more gradual than usual in this genus, rows of punctures very fine, the stripes hardly impressed, faint traces of grey dots. Tibiæ rufous, except at tip.

Length 2 millim.

Hab. GUATEMALA, Calderas 7000 feet (*Champion*).

One female.

19. **Ormiscus guttatus,** sp. n. (Tab. XIV. fig. 8.)

♀. Brown, grey beneath, marked with sharply defined grey dots above. Head and rostrum variegated with grey. Frons two-thirds the width of the base of the rostrum. Anterior lobe of eye narrower than posterior. Antenna feebly rufescent at base; segment 9 longer than broad, 10 broader than long, 11 subcircular in outline. Prothorax nearly twice as broad as long, somewhat rounded at sides before middle, grey spots more or less arranged in longitudinal rows; carina nearly basal, feebly concave, very slightly projecting laterad, not flexed forward beneath angle.

Elytra short, not depressed along suture, finely punctate-striate; a grey patch behind the grey scutellum,

usually connected with some dots which form a half-ring behind the feeble basal callosity. Pygidium with a few grey dots. Legs rufescent-brown, tibiæ paler.

Length 2 millim.

Hab. PANAMA, Bugaba, David (*Champion*).

Three females.

20. **Ormiscus phæomelas,** sp. n. (Tab. XIV. fig. 9.)

♀. Black, partly rufous, variegated with luteous-grey pubescence. Frons three-fourths the width of the rostrum, pubescent luteous-grey near eyes, dotted with similar pubescence centrally. Anterior lobe of eye narrower than posterior. Third segment of antenna half as long again as fourth, the eighth subglobular. Prothorax less than half as broad again as long, subconstricted before carina, rufous at apex, spotted with luteous-grey, a subapical spot at each side of mesial line larger than the others; carina almost vertical above the basal edge, not farther from basal edge at sides than in middle, projecting laterad, not flexed forward beneath angle.

Elytra nearly twice as long as broad, with the subbasal callosities distinct; rufescent, a scutellar space, a patch in middle, and another behind middle, suture and lateral margin more or less black, these black portions ill-defined. Pygidium grey, very slightly variegated with brown. Legs blackish-brown; base of femora and of first tarsal segment and middle of tibiæ (or basal two-thirds) rufous.

Length 2 millim.

Hab. GUATEMALA, Totonicapam 8500–10,500 feet (*Champion*).

Two females.

21. **Ormiscus marmoreus,** sp. n. (Tab. XIV. fig. 10.)

♀. Rufescent-brown, pubescent-grey beneath. Head and rostrum variegated with grey. Rostrum feebly emarginate. Frons more than half the width of the base of the rostrum. Anterior lobe of eye much narrower than posterior. Antenna rufescent at base; segment 3 half as long again as 4, 9 broader than long, 10 more than twice as broad as long, 11 longer than 9. Prothorax constricted before carina, the angle of carina strongly projecting laterad; one-third broader than long, dotted with grey and brown; carina subbasal, not flexed forward at sides beneath angle.

Elytra nearly twice as long as broad, slightly depressed in second interspace, rufescent, tessellated with brownish-black, the dots more or less confluent transversely; pubescence buffish-grey. Pygidium semicircular, grey, variegated with brown. Legs rufous; middle of femora, tip of tibiæ and of tarsal segments brown; first tarsal segment half the length of the tibia.

Length 3 millim.

Hab. GUATEMALA, Quiché Mountains 7000–9000 feet (*Champion*).

One female.

XXX. EUSPHYRUS.

Eusphyrus, Leconte, Proc. Amer. Phil. Soc. xv. p. 399 (1876) (type: *walshi*).

Range: America; numerous species.

♂♀. Similar to *Ormiscus*, but carina basal. The line of separation between *Ormiscus* and *Eusphyrus* is difficult to draw. The basal angle of the prothorax is more produced than in *Ormiscus*, extending generally a little beyond the shoulder and being more or less curved backwards.

The Central-American species of which I know the male can be grouped as follows:—

A. Mid tibia of ♂ with a curved mucro, and before it a small tooth: *minax* and *analis*.
B. Mid tibia of ♂ with a single sharp mucro: *unicolor, ros,* and *mucronatus*.
C. Mid tibia of ♂ with a small black ridge or lobe at apex bearing a comb of short spines at the edge: *fragilis, tonsor, irpex,* and *circulus*.

Key to the Central-American Species.

a. A brown or black, nearly circular, sutural patch or ring on middle of elytra extending outwards to the fourth stria; mid tibia of ♂ slightly dilated at apex, the dilatation bearing a comb of short spines at the longitudinal edge . Species No. 1.
No such ring or patch . . . . . *b.*
b. Upperside evenly luteous-grey; a black lateral patch from shoulder to apical declivity of elytron, reaching above to the third stripe . . . . . Species No. 2.
Upperside evenly grey, without markings; mid tibia of ♂ with an acute mucro. Species No. 3.
Upperside grey and brown . . . . . *c.*
c. Upperside brown, marked with sharply-defined grey spots . . . . . *d.*
Grey markings not sharply defined, or upperside grey marked with brown . *e.*
d. White dots of pronotum very numerous; pronotum rather strongly plicate-reticulate; elytra very densely granulate . . . . . Species No. 4.
White dots of elytra few in number; pronotum finely reticulate; mid tibia of ♂ with a curved mucro . . . . . Species No. 5.
e. A brown, median, sutural patch on elytra, straight behind, separated from brown lateral area by a luteous-grey line situated in fifth interspace and extending from luteous-grey basal area backwards; grey mesial vitta of the smooth pronotum not interrupted; mid tibia of ♂ simple . . . . Species No. 6.
Elytra differently marked . . . . . *f.*
f. Pronotum feebly coriaceous, practically smooth . . . . . *g.*
Pronotum more or less distinctly plicate-reticulate . . . . . *j.*
g. Subbasal callosity of elytra prominent; apical declivity grey, bordered in front by a broad, brown, transverse band . . . . . Species No. 7.
Subbasal callosity of elytra not prominent . . . . . *h.*
h. Elytra with large brown patch or band behind middle . . . . . *i.*
Elytra marmorated with brown and grey . . . . . Species No. 8.
i. Mid tibia of ♂ with a simple mucro . . . . . Species No. 9.
Mid tibia of ♂ with a small black apical ridge, which bears a comb of short spines at the longitudinal edge . . . . . Species No. 10.
j. Pronotum unicolorous . . . . . *k.*
Pronotum variegated . . . . . *l.*
k. Pubescence of upperside creamy-buff . . . . . Species No. 11.
Pubescence of upperside whitish-grey . . . . . Species No. 12.
l. Segment 9 of antenna half as long again as apically broad, as long as segments 7 and 8 together . . . . . Species No. 13.
Segment 9 of antenna about as broad as long . . . . . *m.*

m. Apical declivity of elytra more or less densely pubescent grey or luteous . . *n*.
Apical declivity of elytra sparsely variegated with grey; base of suture with a conspicuous, elongate, creamy-white spot; basal angle of pronotum very little produced laterad . . . . . Species No. 14.
n. Apical declivity of elytra uniformly grey like pygidium, proximally bordered by a brown band . . . . . Species No. 15.
Apical declivity of elytra variegated with brown . . . . . *o*.
o. Pronotum with numerous longitudinal ridges . . . . . *p*.
Pronotum with very few or no longitudinal ridges, simply reticulate . . . *r*.
p. Elytra with luteous or brown transverse band at or before apical declivity; tarsi rufous or luteous for the greater part . . . . . *q*.
No such bands; tarsi blackish-brown for the greater part . . . . . Species No. 16.
q. Pronotum somewhat depressed before carina; elytra strongly declivous behind, with grey band on the declivous portion . . . . . Species No. 17.
Pronotum not depressed; upper surface of body almost evenly convex (in side view) from head to pygidium; a luteous-grey band before apical declivity of elytra; fore tibia not brown at apex . . . . . Species No. 18.
r. Pronotum for the greater part luteous-grey . . . . . Species No. 19.
Pronotum for the greater part brown . . . . . Species No. 20.

1. **Eusphyrus circulus,** sp. n. (Tab. XIV. fig. 11.)

♂ ♀. Brown, clayish-grey pubescent parts of upperside reddish, base and sides of pronotum, a spot on basal callosities of elytra, a nearly circular ring common to both elytra, and two indistinct bands before apex, pubescent-brown; antenna rufous, at least at base; legs rufous, middle of femora and apex of tarsi brunnescent. Pronotum finely rugose. Elytra rather coarsely striate-punctate; alternate interspaces, especially the seventh, somewhat convex, basal callosity distinct. Mid tibia of ♂ dilated internally at apex into a small black ridge which bears a comb. The ring on the elytra often black filled in with black or brown.

Length 2 millim.

Hab. GUATEMALA, Calderas and Quiché Mountains, 7000–9000 feet (*Champion*).

A series.

2. **Eusphyrus bicolor,** sp. n. (Tab. XIV. fig. 12.)

♀. Rufous, brunnescent beneath, almost uniformly pubescent-grey; side of elytron from shoulder to apical declivity black, this area narrowest in front, posteriorly extending dorsad as far as the third line of punctures; a spot on basal callosities brown; pronotum with traces of brown spots; antenna black, rufous at base; tarsi, except bases of segments, and tip of tibia blackish-brown. Prothorax half as broad again as long, sides rather strongly rounded anteriorly, finely rugose. Elytra slightly flattened above; stripes of punctures only feebly impressed.

Length $2\frac{1}{4}$ millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

Two females.

3. **Eusphyrus unicolor,** sp. n. (Tab. XIV. fig. 13.)

♂. Black; elytra slightly rufescent; base of proximal antennal segments and of first tarsal segment, as well as greater portion of tibiæ, rufous; the whole body densely covered with a whitish-grey pubescence, without markings. Frons less than half the width of the rostrum. Prothorax one-third broader than long, widely separate from elytra at sides, but carina touching scutellum and being at sides almost vertically over the true basal edge, projecting laterad. Scutellum longer than broad. Elytra elongate, not flattened, not so wide at base as prothorax, deeply striate-punctate, basal callosity hardly vestigial. First tarsal segment about half as long as the tibia, that of fore tarsus longer than the claw-segment; mid tibia with a small apical mucro.

Length 2 millim.

Hab. PANAMA, Caldera in Chiriqui (*Champion*).

One male.

4. **Eusphyrus scutosus,** sp. n. (*E. scutellaris*, Tab. XIV. fig. 14.)

♀. Brown; underside pubescent white-grey; upperside brown spotted with white-grey dots, which are partly arranged in transverse rows. Frons two-thirds the width of the rostrum. Antenna rufescent at base; club rather compact, last segment broader than long. Prothorax one-fourth broader than long, conical, with the sides feebly rounded, very densely punctate-reticulate; apex rufescent, spots in this area larger than on rest of pronotum; carina projecting laterad and somewhat backwards, the basal angle of the pronotum being very acute. Elytra broad, short, narrower at shoulder than prothorax, very slightly flattened above, not distinctly impressed at suture, very densely granulate, with the basal, dorsal, and humeral callosities vestigial; stripes of punctures rather coarse; white dots denser at and near suture before middle, and again just behind middle; a conspicuous white basal streak on suture, about four times as long as broad. Legs rufous; middle of femora and especially the tarsi brunnescent.

Length $2\frac{1}{2}$ millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

One female.

5. **Eusphyrus ros,** sp. n. (Tab. XIV. fig. 15.)

♂ ♀. Brown, slightly rufescent; underside, rostrum, sides of head, and a number of dots and spots on pronotum and elytra whitish-grey; rest of upperside coppery-brown. Head and rostrum more densely pubescent in ♂ than in ♀. Frons in ♀ half, in ♂ less than half, the width of the rostrum. Antenna rufous at base. Prothorax nearly half as broad again as long, finely rugose, closely applied to elytra; carina projecting beyond shoulders; an interrupted mesial vitta (or two spots) accompanied by some minute dots, further laterad a row of three (or two) dots, and still further towards the side some more dots, grey. Scutellum grey. Elytra short, strongly punctate-striate, with convex interstices, a larger sutural basal spot laterally contiguous with a subbasal dot situated in third and fourth interspaces, the same interspaces bearing a dot behind middle and another before apex; two to four small dots in each of the other interstices, besides some extremely minute speckles. Legs rufous; middle of femora, apex of tibiæ, and the tarsi brunnescent; mid tibia of ♂ strongly mucronate, the mucro curved, pointed; fore tarsus of ♂ longer than tibia.

Length $1\frac{2}{3}$ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

A small series of each sex. Close to *E. hamatus* and *E. scutellaris*, Jord. (1904), from Brazil, differing from them in the less convex pronotum, less concave carina, much more rounded shoulder-angles, more extendedly rufous legs, &c.

6. **Eusphyrus rectus,** sp. n. (Tab. XIV. fig. 16.)

♀. Brown; light pubescent parts partly rufous, especially on elytra; underside grey; pronotum with the mesial vitta and a few lateral dots, grey; elytra for the greater part grey, a quadrangular sutural patch in middle, usually produced forward at suture, a large irregular patch along sides, an irregular transverse line or band on apical declivity as well as a subapical sutural spot brown. Frons half the width of the rostrum in ♀, less in ♂. Prothorax smooth, closely applied to elytra except at sides; carina a little projecting beyond shoulders. Elytra coarsely punctate-striate, with somewhat convex interstices; basal callosity vestigial. Legs rufous; middle of femora, tarsi, and apex of tibiæ brunnescent; fore tarsus longer than tibia.

Length $1\frac{1}{4}$ millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

Three females.

7. **Eusphyrus lioderus,** sp. n. (Tab. XIV. fig. 17.)

♀. Robust, brown, pubescent-grey, variegated with brown. Frons less than one-half the width of the base of the rostrum. Antenna rufous; club brown, segment 9 a little longer than broad, 11 subcircular. Prothorax more than half as broad again as long, not closely applied to the elytra, depressed along the carina, smooth, marmorated with brown. Elytra somewhat depressed at suture, with the subbasal callosities distinct and the stripes of punctures rather feebly impressed; basal two-thirds grey, slightly marmorated with brown; a transverse band before apical declivity, not reaching side-margins, brown; apical declivity and pygidium grey, faintly variegated with brown. Pygidium slightly narrowing from base to apex, the latter rounded. Legs rufous; apex of tibiæ and of tarsal segments feebly brown; first hind tarsal segment nearly half the length of the tibia.

Length $2\frac{2}{5}$ millim.

Hab. Guatemala, Cerro Zunil, 4000 feet (*Champion*).

One female.

8. **Eusphyrus lævicollis,** sp. n. (Tab. XIV. fig. 18.)

♀. Similar to *E. lioderus*; head and pronotum more olive. Frons narrower; prothorax more rounded laterally, the basal angle a little less strongly projecting; elytra grey, almost uniformly variegated with brown, subbasal declivity less distinct, no brown band before apical declivity, the latter not more densely grey than the rest of the elytra; tarsi and apex of tibiæ more extended brown, first hind tarsal segment longer.

Length $2\frac{1}{3}$ millim.

Hab. Panama, Volcan de Chiriqui, 3000 feet (*Champion*).

One female.

9. **Eusphyrus mucronatus,** sp. n.

♂ ♀. Rufous, partly brunnescent; under surface, head, and rostrum, and in ♂ also vertical sides of pronotum, densely pubescent-white, rest of upperside variegated with white. Frons of ♂ one-third, of ♀ half, the width of the rostrum. Prothorax about one-third wider than long, conical, with the sides gently but distinctly rounded, slightly coriaceous, practically smooth, a broadish mesial vitta more densely pubescent-white than sides of disc; carina basal, but not exactly vertically over the true basal edge sublaterally, projecting sidewards and a little backwards, the basal angle of the pronotum being acute. Elytra subcylindrical, not impressed at suture, rather coarsely punctate-striate, with the interstices slightly convex, sparsely pubescent-white; a large space in middle of each elytron brown, not reaching

suture, but extended forward at sides. Legs rufous, more or less brunnescent in middle of femora, at apex of tibiæ, and on tarsi; mid tibia mucronate in ♂.

Length $1\frac{2}{3}$ millim.

Hab. GUATEMALA, Zapote, Guatemala City (*Champion*).

Three females, four males.

10. **Eusphyrus tonsor,** sp. n.

♂ ♀. Very close to *E. mucronatus*; pronotum rather more extended grey, the markings confluent, the brown interspaces more or less transverse; carina less convex laterally than in *E. mucronatus*; elytra with brown sutural spot before apex; mid tibia of ♂ not mucronate, but dilated into a small black ridge which bears a comb at the edge.

Length $1\frac{2}{3}$ millim.

Hab. GUATEMALA, Guatemala City, Capetillo, Dueñas (*Champion*).

One male, two females.

11. **Eusphyrus dilutus,** sp. n.

♀. Pale rufous, brunnescent beneath, densely covered with a luteous pubescence; no markings on pronotum; elytra with a few brown spots—one on suture before middle, an irregular transverse line in middle, and another before apical declivity, besides two or three minute dots on suture and at sides. Frons less than half the width of the rostrum. Antenna wholly rufous, or brown distally. Prothorax half as broad again as long, closely applied to elytra, densely rugose; carina basal, projecting laterad beyond shoulders. Scutellum longer than broad. Elytra short, punctate-striate, not depressed; subbasal callosity indistinct. Femora and apex of tibiæ and of tarsal segments brunnescent; fore tarsus as long as tibia.

Length 2 millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

Two females.

12. **Eusphyrus fragilis,** sp. n. (Tab. XIV. fig. 19.)

♂. Similar to *E. mucronatus*; eyes a very little nearer together; prothorax much shorter, about twice as broad as long, wider at base than in *E. mucronatus*, the carina more projecting, apical margin paler rufous than disc, no distinct separate white markings; elytra a little longer, with a shadowy brown sutural vitta from base to near middle of suture, here separating into an oblique band on each elytron extending obliquely towards the side, side-margin slightly brunnescent; mid tibia (♂) without spur at apex, but bearing internally at apex an oblique black ridge which is spinose at the edge.

Length $1\frac{1}{2}$ millim.

Hab. GUATEMALA, Aceituno (*Champion*).

One male.

13. **Eusphyrus vestitus,** sp. n. (Tab. XIV. fig. 20.)

♀. Brown, pubescent-grey beneath, clayish above. Rostrum rufous. Frons less than half the width of the rostrum. Antenna luteous at base; club brown, segment 9 half as long again as broad, 11 longer than broad, acuminate. Prothorax nearly twice as broad as long, densely rugate-plicate, rotundate-angustate, slightly depressed along the carina, clay-colour, variegated with brown, a large brown mesial patch before carina including a luteous mesial streak with a small dot at each side of it. Elytra feebly depressed at suture, pubescent-luteous; a broad brown median area from suture to sides, extending forward to shoulder, including a number of more or less sharply-defined luteous spots at and near suture and again laterally; subbasal callosities vestigial, brown, the spot sharply defined; rest of elytra faintly marmorated

with brown. Legs brown; apex of femora, basal two-thirds of tibiæ, and nearly the whole first tarsal segment luteous.

Length 2 millim.

Hab. MEXICO, Atoyac in Vera Cruz (*H. H. Smith*).

One female.

14. **Eusphyrus rugicollis,** sp. n. (Tab. XIV. fig. 21.)

♀. Black; first segment of antenna, apex of pronotum, apical edge of elytra, and larger portion of tibiæ rufous. Rostrum rufescent at apex, sparsely clothed with luteous scale-hairs like the head. Frons more than half the width of the base of the rostrum. Prothorax more than half as broad again as long, more strongly rounded at sides than usual in this genus, coarsely and densely rugate-reticulate, marked with a few grey spots; carina basal, lateral angle very little projecting laterad. Elytra almost evenly convex, not impressed at suture, interspaces densely granulate; an elongate spot at base of suture creamy-white, sutural area from this spot to apical declivity more densely pubescent with greyish-white than the rest of the elytra. Pygidium nearly semicircular, brown, with dispersed grey hairs.

Length $1\frac{3}{4}$ millim.

Hab. GUATEMALA, Torola, 1000 feet (*Champion*).

One female.

15. **Eusphyrus analis,** sp. n. (Tab. XIV. fig. 22.)

♂ ♀. Robust, blackish-brown, pubescent luteous-grey, more whitish beneath than above. Frons a little less (♂) or a little more (♀) than half the width of the base of the rostrum. Antenna brown; segment 1 rufous, 9 about as long as broad. Prothorax half as broad again as long, densely and coarsely rugate-plicate, depressed before the carina; basal angle rather strongly projecting laterad and a little backwards; apical edge, an interrupted mesial vitta, and some lateral discal spots grey. Elytra subquadrangular, strongly declivous behind, depressed basally at suture, the subbasal callosities being distinct though not tuberculiform, strongly punctate-striate; a semicircular band from shoulder to shoulder, ill-defined, and apical declivity densely pubescent luteous-grey; suture and lateral margin spotted with luteous-grey. Pygidium longer in ♂ than in ♀, not semicircular, being in ♀ almost rotundate-truncate at apex. Legs rufous, middle of femora, apex of tibiæ and of tarsal segments brunnescent; mid tibia of ♂ with curved apical mucro and proximally of it with a tooth.

Length $2\frac{1}{2}$ millim.

Hab. GUATEMALA, Calderas, 7000 feet (*Champion*).

One male, two females. In colour and shape similar to *E. lioderus*, but easily distinguished by the rugate-plicate pronotum.

16. **Eusphyrus simplex,** sp. n.

♀. Brown, apex of pronotum, nearly the whole elytra, base of antenna, tibiæ (except tip), and basal half of first tarsal segment rufous. Frons two-thirds the width of the base of the rostrum, sparsely pubescent-clay like the rostrum. Antennal segment 9 broader than long, asymmetrical at apex, 11 also a little wider than long. Prothorax more than half as broad again as long, rotundate-angulate, depressed along the carina, plicate-reticulate, with dispersed luteous spots, basal angle slightly projecting. Elytra evenly convex, not depressed at suture, with the subbasal callosities vestigial, rather deeply punctate-striate, the interspaces minutely and dispersedly granulate, luteous-grey, suture blackish, chequered with grey, some brown spots on disc near suture, no sharply-defined markings laterally. Pygidium semicircular, grey. First hind tarsal segment half the length of the tibia.

Length 2 millim.

Hab. GUATEMALA, Quiché Mts., 7000–9000 feet (*Champion*).

Four females. Similar to *E. rugicollis*, but the elytra of the latter are densely granulate, especially at the base.

17. **Eusphyrus irpex,** sp. n. (Tab. XIV. fig. 23.)

♂. Elongate, brown, apex of pronotum, light-pubescent parts of elytra, tibiæ (except apex), basal three-fourths of first tarsal segment, and base of antenna rufous, base of the other tarsal segments as well as of femora also rufescent. Frons a little over one-third the width of the base of the rostrum. Antennal segment 9 as broad as long, 11 a little broader than long. Prothorax only one-fourth broader than long, rugate-plicate, depressed before carina, rounded before middle at sides; apex, an interrupted mesial line and some discal dots luteous-grey. Elytra about twice as long as broad, cylindrical, rather densely granulate, a sutural spot at base white, the other markings luteous-grey—namely, a large ill-defined sutural patch before middle, laterally produced forward, a transverse band on apical declivity, and some indistinct spots at sides. First segment of fore tarsus less than half the length of the tibia; mid tibia (of ♂) dilated at apex into a black oblique lobe which bears a comb of short spines at the edge.

Length 2 millim.

Hab. GUATEMALA, Capetillo (*Champion*).

One male.

18. **Eusphyrus tenuis,** sp. n. (Tab. XIV. fig. 24.)

♀. Rufous-brown, apical edge of rostrum, base of antenna, apex of pronotum, and legs rufous. Frons over half the width of the base of the rostrum. Prothorax over half as broad again as long, rotundate-angustate, coarsely rugate-plicate, markings luteous—namely, a mesial vitta which is connected with a discal dot before middle and again behind middle, two more spots on disc further laterad, apical edge, sides, and an ill-defined belt along carina; basal angle acute, produced. Elytra almost evenly convex, not depressed at suture, apical declivity gradual; deeply punctate-striate, finely and dispersedly granulate, striated and dotted with luteous-grey, a narrow transverse luteous-grey belt at apical third, suture blackish.

Length 2 millim.

Hab. PANAMA, Volcan de Chiriqui, 8000 feet (*Champion*).

One female.

19. **Eusphyrus insignis,** sp. n. (Tab. XIV. fig. 25.)

♀. Similar in shape to *E. tenuis*, proportionately longer, frons a little narrower, pattern different, elytra more finely striped. Upperside pubescent yellowish-buff, underside buffish-grey. Pronotum with the following brown spots: a dot at apex on each side of mesial line, followed in middle by a double dot, a larger spot in middle of side, more or less connected with a transverse streak situated before the carina. The brown markings of the elytra very sharply defined: a square spot covering the subbasal callosity and extending to basal edge, an angular spot before middle of suture, laterally connected with a posthumeral lateral spot, and also connected in fourth interspace with a square postmedian patch, the square patches of the two elytra connected with one another by a thin line; lateral and apical margin slightly marmorated with brown. Pygidium semicircular, uniformly luteous-grey.

Length 2 millim.

Hab. GUATEMALA, Cerro Zunil, 4000 feet (*Champion*).

One female.

20. **Eusphyrus minax,** sp. n.

♂ ♀. Brown, pubescent-grey beneath, luteous-grey above. Frons one-third (♂) or one-half (♀) the width of the rostrum, in ♀ clayish at eyes, in ♂ densely clayish-grey like the rostrum. Antennal segments 1 to 4 and 11 luteous. Prothorax one-third broader than long, strongly angustate, coarsely rugate-reticulate, depressed at carina, with the basal angle strongly projecting laterad and a little anad, spotted with luteous-grey. Elytra slightly depressed at base of suture, strongly punctate-striate, finely and dispersedly granulate, an ill-defined band of spots behind the brown subbasal callosities curved forward laterally, a transverse patch or band, also ill-defined, on apical declivity, and a number of lateral and apical dots as well as some sutural ones, all luteous-grey. Legs rufescent-brown, basal half or two-thirds of tibiæ and of first tarsal segment rufous; first fore tarsal segment less than half the length of the tibia in both sexes; mid tibia of ♂ with an apical curved mucro and before it with a tooth.

Length 2 millim.

Hab. GUATEMALA, Cerro Zunil, 4000 feet (*Champion*).

One pair.

XXXI. SCYMNOPIS.

Scymnopis, Jordan, Nov. Zool. xi. p. 282 (1904) (type: *suturalis*).

Range: South and Central America.

1. **Scymnopis anthrenus,** sp. n.

Brown. Head and rostrum densely pubescent luteous-grey; frons one-third the width of the rostrum. Antenna rufous at base, luteous at apex. Prothorax densely rugate-reticulate, more than half as broad again as long, somewhat irregularly clothed with luteous-grey, the pubescence densest at apex and sides; carina obtusely angulate in middle. Elytra widest at base, strongly but evenly punctate-striate, very convex at base near scutellum, slightly depressed at suture behind, variegated with luteous, apical edge and pygidium rufescent, both densely pubescent-luteous. Tibiæ rufescent, except at apex.

Length $2\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Two specimens.

XXXII. BRACHYTARSUS.

Anthribus, subgen. *Brachytarsus,* Schoenherr, Curc. Disp. Meth. p. 38 (1826) (type: *varius*).

Range: Cosmopolitan.

♂ ♀. The lateral carina of the prothorax does not reach the apex in the three species described here.

Elytra strongly tessellated with brown	Species Nos. 1 and 2.
Elytra almost uniformly grey	Species No. 3.

1. **Brachytarsus championi,** sp. n.

♂. Brown, partly rufous, upperside variegated with blackish-brown and clay-colour. Rostrum more than twice as broad as long. Antenna rufous, club black. Prothorax strongly narrowed apicad from behind centre, longitudinally rugate-plicate in centre, rufescent at apex and base, with two transverse rows of black confluent spots and two additional brown spots at apex; angle of carina somewhat rounded. Elytra half as long again as broad, gradually declivous behind, somewhat depressed at suture posteriorly, strongly punctate-striate, alternate interspaces a little elevate and conspicuously tessellated with blackish-

brown and luteous. Underside slightly punctured at sides, practically impunctate mesially. Legs rufescent-brown, basal half of tibiæ and the tarsi paler, a grey ring before middle of tibiæ and another at apex, both indistinct.

Length 3 millim.

Hab. GUATEMALA, Cerro Zunil, Capetillo (*Champion*).

Two males.

2. **Brachytarsus strigosus,** sp. n.

♂ ♀. In colour similar to *B. championi*, smaller, more grey; prothorax much more gradually narrowed from base to apex, not subangulate at basal third, basal angle less rounded; elytra more cylindrical, each with a black spot before middle occupying interspaces 3, 4, and 5.

Length $2\frac{1}{2}$ millim.

Hab. MEXICO, Guanajuato (*Höge*).

A series.

3. **Brachytarsus naviculus,** sp. n. (Tab. XIV. fig. 27.)

♀. Brown beneath, rufescent above, pubescent-grey, elliptical, being evenly rounded at the sides from head to pygidium. Prothorax smooth, laterally with dispersed very shallow circular punctures, no distinct markings, basal angle 90°, with the tip rounded off. Elytra very gradually slanting behind, convex-declivous from base, with faint vestiges of brown spots. Pygidium and sternites 4 and 5 rufous. Underside feebly coriaceous, with very shallow circular punctures here and there. Legs and antenna rufous, segments 10 and 11 of the latter brown.

Length $2\frac{1}{3}$ millim.

Hab. GUATEMALA, El Jicaro in Vera Paz (*Champion*).

One female.

XXXIII. ANTHRIBULUS.

Anthribulus, Leconte, Proc. Amer. Philos. Soc. xv. p. 406 (1876) (type: *rotundatus*).

Range: North and Central America.

1. **Anthribulus rotundatus.**

Anthribulus rotundatus, Leconte, l. c. p. 407 (1876)[1].

Hab. NORTH AMERICA, Atlantic district[1].—MEXICO, Orizaba (*H. H. Smith*).

One specimen, agreeing fairly well with others before me from North America.

XXXIV. PAREXILLIS.

Parexillis, Jordan, Nov. Zool. xi. p. 284 (1904) (type: *lineatus*).

Range: South and Central America.

♂ ♀. Rostrum neither carinate nor sulcate on upperside. Carina of prothorax basal. Antenna long. Eye deeply sinuate.

Similar to the Oriental *Exillis*, Pascoe (1860).

1. **Parexillis striatus,** sp. n. (Tab. XIV. fig. 26.)

♂. Nearly related to *P. lineatus*, Jord. (*l. c.*); three vittæ on pronotum, continued over the head, and alternate interspaces of elytra luteous, these stripes sharply defined, the interspaces between them being uniformly brown; stripes in third and ninth elytral interspaces continuous behind.

Length $3\frac{2}{3}$ millim.

Hab. NICARAGUA, Chontales (*Belt*).

One male.

B. Subfam. *ANOCERINÆ.*

XXXV. NOTIOXENUS.

Notioxenus, Wollaston, Journ. Ent. i. p. 212 (1861) (type: *bewicki*).

Range: St. Helena, Central America, Cuba, Japan.

♂ ♀. Carina of pronotum distant from base, not continued forward at sides. Third tarsal segment broad, first of fore tarsus very short, tooth of claw large. The round eye is more coarsely granulose in the two American forms here described than in the species from St. Helena.

1. **Notioxenus polius,** sp. n.

♀. Blackish-brown, pubescent-grey, the pubescence uneven, forming spots on the elytra. Antenna luteous, segments 9 and 10 brown. Head and pronotum densely and coarsely punctured. Prothorax shorter than long, narrowed from carina to apex, convex above, somewhat depressed in middle before carina; the latter angulate mesially. Elytra elongate-ovate, widest behind middle, coarsely punctate-striate, with minute punctures in the interstices. Third and claw segments of tarsi luteous.

Length 2 millim.

Hab. GUATEMALA, Panzos in Vera Paz (*Champion*).

One female.

2. **Notioxenus ater,** sp. n. (Tab. XIV. fig. 30.)

♀. Black, shining, sparsely pubescent-grey. Antenna luteous, segments 9 and 10 brown. Tarsi rufescent. Head densely covered with large round punctures. Prothorax conical, half as broad again as long, slightly depressed in middle before carina, punctate, the punctures large, but not close together; carina very obtusely angulate in middle. Elytra shorter than in *N. polius*, widest before middle, punctate-striate, the stripes much deeper at the sides than above; numerous short stiff hairs situated in minute punctures.

Length $1\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba 800–1500 feet (*Champion*).

One female.

XXXVI. AMBONODERES, gen. nov.

♀. Hairy. Eye round, truncate-sinuate in front. Antennal cavity small. Antenna hairy, reaching to base of prothorax; segment 3 shorter than 2; club loose, segment 9 a little longer than apically broad, narrower than 10 and 11, 10 broader than long, 11 asymmetrically elliptical, large, nearly as long as 9 and 10 together. Prothorax closely applied to the elytra, with a lateral carina from base to apex, the side of prosternum somewhat concave. First tarsal segment shorter than claw-segment.

Type: *A. punctiger*, sp. n.

The insect reminds one a little of *Brachytarsus fasciatus*, Forst. (1771), in the carinate sides of the prothorax.

1. **Ambonoderes punctiger,** sp. n. (Tab. XIV. fig. 28.)

♀. Rufous-tawny, head, prothorax, and segments 9 and 10 of antenna rufescent-brown, antennal segment 11 luteous.

Elongate-elliptical. Head finely punctured; frons narrowed anteriorly. Eye prominent, coarsely granulose. Prothorax densely covered with large deep punctures, closely applied to elytra, convex in front, slightly depressed along carina, which is angulate in middle, side very feebly sinuate before basal angle, strongly rounded in front. Scutellum punctiform, distinct. Elytra parallel at sides from base to middle, then evenly rounded, slightly depressed at base of suture, with the subbasal callosities vestigial, gradually convex-declivous from middle to apex, very strongly punctate-striate, the punctures large but not confluent. Mesosternal process rounded.

Length $1\frac{1}{4}$ millim.

Hab. GUATEMALA, Pantaleon 1700 feet (*Champion*).

One female.

XXXVII. ARÆCERUS.

Aræcerus, Schoenherr, Curc. Disp. Meth. p. 40 (1826) (type: *coffeæ=fasciculatus*).
Araeocerus, Schoenherr, Gen. Spec. Curc. v. p. 273 (1839).

Range: Tropics and Subtropics of both Hemispheres.

1. **Araecerus fasciculatus.**

Anthribus fasciculatus, De Geer, Mém. Ins. v. p. 276, t. 16. fig. 2 (1775).

Hab. MEXICO, Toxpam (*Sallé*); BRITISH HONDURAS, Belize (*Blancaneaux*); PANAMA, Bugaba (*Champion*).

Four females. A cosmopolitan species.

XXXVIII. ACAROMIMUS, gen. nov.

Close to *Acarodes*, Wollast. (1879).

Segments 3 to 8 of antenna together a little longer than the club, segment 11 about as long as 9 and 10 together. Prothorax with a lateral carina which extends from base beyond middle and thence is directed dorsad for some distance. Tarsi as in *Acarodes*, but the third segment broader.

Type: *A. sharpi*, sp. n.

The extension of the tip of the lateral carina of the prothorax in a dorsal direction is a character not yet found outside this genus.

There are three American Anthribids described which come near *Acaromimus*, viz., *Xenorchestes americanus*, Motsch. (1873), from Alabama, *Euxenus punctatus*, Lec. (1876), from Michigan and Canada, and *Euxenus piceus*, Lec. (1878), from Florida. The first of the three is probably also an *Euxenus* *; its description is insufficient for

* [This name has also been used by Faust for a Central- and South-American genus of Cryptorrhynchids (*cf.* Biol. Centr.-Am., Col. iv. 4, p. 494), but Leconte has of course priority.—ED.]

recognition. According to Leconte, the carina of the prothorax in his genus does not run dorsad before the middle. The tarsal claw of *Acaromimus*, *Acarodes*, and *Xenorchestes* bears a short, obtuse, subbasal tooth.

1. **Acaromimus sharpi,** sp. n. (*Acaropsis sharpi*, Tab. XIV. figg. 31, 31 *a*.)

Brownish-black, glossy, basal half of antenna rufous; legs pitchy, tarsi rufescent. Head sparsely pubescent-grey, rest of body glabrous. In shape similar to *Acarodes gutta*, Wollast. (1879), but more evenly rounded at sides from head to apex of elytra, the prothorax and elytra being wider at base than in *Acarodes*. Pronotum punctured, the punctures smaller than the interspaces, larger at sides and apex than posteriorly on disc. Elytra minutely punctured above, coarsely at the sides, the punctures more or less irregularly seriate, three rows of large punctures laterally at base more conspicuous than the others.

Length $\frac{4}{5}$ millim.

Hab. British Honduras, Belize (*Blancaneaux*).

Two specimens. Named after Dr. D. Sharp, who, finding it among other small Coleoptera sent to him for study, correctly marked it "Anthribid, near *Acarodes*."

XXXIX. HOLOSTILPNA, gen. nov.

♂ ♀. Glossy. Eye elliptical, vertical. Frons narrower behind than at the antennal grooves. Antenna reaching beyond base of prothorax, longer in ♂ than in ♀, segments 1 and 2 thicker and longer than 3 to 8, 3 as long as or shorter than 4, this shorter than 5, the following three gradually decreasing or equal in length, club very loose, segments asymmetrical, 9 and 10 triangular, 11 obliquely truncate-sinuate apically. Carina of pronotum not quite basal, flexed forward at sides, not reaching to middle; basal carina distinct, laterally continuous with a longitudinal carina which, instead of joining the subbasal carina, runs parallel with it, the space between the two lateral carinæ impressed. Elytra ovate, widest behind base, basal edge of each somewhat convex, suture slightly elevate. Anterior legs much prolonged in ♂, less so in ♀; first fore tarsal segment of ♂ nearly half the length of the fore tibia, somewhat curved, about one-third the length of the tibia in ♀. Tip of pygidium slightly turned up in ♂.

Type: *Choragus nitens*, Lec. (1884), from the United States.

1. **Holostilpna glabra,** sp. n.

♂. Resembling *H. nitens*, Lec. (1884). Antenna and legs black, feebly pitchy at the joints. Subbasal carina of prothorax forming an obtuse but distinct angle laterally and extending a little farther frontad at side than in *H. nitens*, not being shorter than the second lateral carina; the space between the two lateral carinæ more deeply impressed. Elytra pitchy in middle, more finely seriate-punctate, the stripes less impressed, the punctures of stripes 2, 3, and 4 obsolescent at apex.

Length 2 millim.

Hab. Panama, Volcan de Chiriqui 3000 feet (*Champion*).

One male.

2. **Holostilpna globosa,** sp. n.

♀. Shorter, broader, and more convex than *H. nitens* and *H. glabra*. Prothorax much more densely punctured above and below, widest at base, strongly narrowed from the apex of the lateral carinæ forward; lateral angle of subbasal carina a little over 90°, being less obtuse than in *H. glabra*; the two lateral carinæ of equal length, with the interspace impressed. Elytra much less angustate at base than

in the other two species, not quite so heavily seriate-punctate as in *H. nitens*, but more strongly than in *H. glabra*. Puncturation of mesosternum denser than in the other species.

Length $1\frac{2}{3}$ millim.

Hab. PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).

One female.

3. **Holostilpna picipes,** sp. n.

♀. Agreeing with *H. nitens* in the even lateral curve of the subbasal carina of the pronotum and the rather deep striation of the elytra. Antenna pitchy, its base and the legs rufescent; segments 6, 7, and 8 of antenna shorter than in *H. nitens*, club broader. The lateral branch of the subbasal carina of pronotum longer than in *H. nitens*, closer to the second lateral carina. Elytra longer, less rounded at sides before middle, first stripe with irregular double row of punctures from base to apical third, these punctures rather more numerous than in *H. nitens* ♀.

Length $1\frac{3}{4}$ millim.

Hab. GUATEMALA, Purula (*Champion*).

One female.

XL. DYSNOS.

Dysnos, Pascoe, Ann. & Mag. Nat. Hist. (3) iv. p. 438 (1859) (type: *auricomus*).

Range: Oriental and Neotropical Regions, probably cosmopolitan.

♂ ♀. Eye elongate, vertical, coarsely granulose; frons narrower posteriorly than behind the antennal grooves; prothorax very densely punctate-reticulate, basal angle acute, carina basal; elytra very densely granulose.

1. **Dysnos rufipes,** sp. n. (Tab. XIV. figg. 29, 29 *a*.)

♂. Black, opaque, sparsely pubescent-grey; base of antenna luteous, mouth-parts and legs rufous. Elongate, subcylindrical. Prothorax conical, with the sides slightly rounded, one-third broader than long. Elytra nearly twice as long as broad, of even width from base to apical declivity, punctate-striate, the stripes distinctly impressed, eighth interspace wider than the others, with irregular large punctures.

Length $1\frac{1}{3}$ millim.

Hab. PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).

One specimen.

2. **Dysnos brevis,** sp. n.

♀. In colour like the preceding, legs and base of antenna more pitchy. Much shorter and broader; prothorax nearly twice as broad as long; elytra more strongly convex behind base, eighth interspace not wider than the others, without large punctures.

Length 1 millim.

Hab. PANAMA, Volcan de Chiriqui 2500–4000 feet (*Champion*).

One specimen, apparently a female.

List of Species described from Mexico and Central America since the publication of the preceding pages.

BRENTHIDÆ.

Brenthus festivus, Senna, Ann. Soc. Ent. Belg. xli. p. 233 (1897).—Chiriqui and Colombia.

SCOLYTIDÆ.

Dendroctonus mexicanus, Hopkins, Proc. Ent. Soc. Wash. vii. p. 80 (1905).—Mexico, Amecameca.

Gnathotrichus nitidifrons, Hopkins, l. c. p. 72.—Mexico, Michoacan.

Phlœophthorus moriperda, Hopkins, l. c. p. 77.—Mexico, Irapuato.

Phlœosinus tacubayæ, Hopkins, l. c. p. 78.—Mexico, Tacubaya.

—— *baumanni*, Hopkins, l. c. p. 79.—Mexico, Tacubaya.

Pityophthorus chalcoensis, Hopkins, l. c. p. 73.—Mexico, Chalco.

—— *herrerai*, Hopkins, l. c. p. 74.—Mexico.

Platypus pini, Hopkins, l. c. p. 71.—Mexico, Chalco.

Tomicus mexicanus, Hopkins, l. c. p. 75.—Mexico.

—— *bonanseai*, Hopkins, l. c. p. 76.—Mexico, Tacubaya.

Dendroctonus parallelocollis, Chap. (*anteà*, p. 147), is recorded by Mr. Hopkins (*l. c.* pp. 80, 81) from Michoacan, and is stated to be the species most to blame for the destruction of the pine-forests in Mexico.

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[Names in small capitals refer to Families, &c.; those in roman type to the chief reference to each species included in the work; those in italics to species incidentally mentioned, synonyms, &c.]

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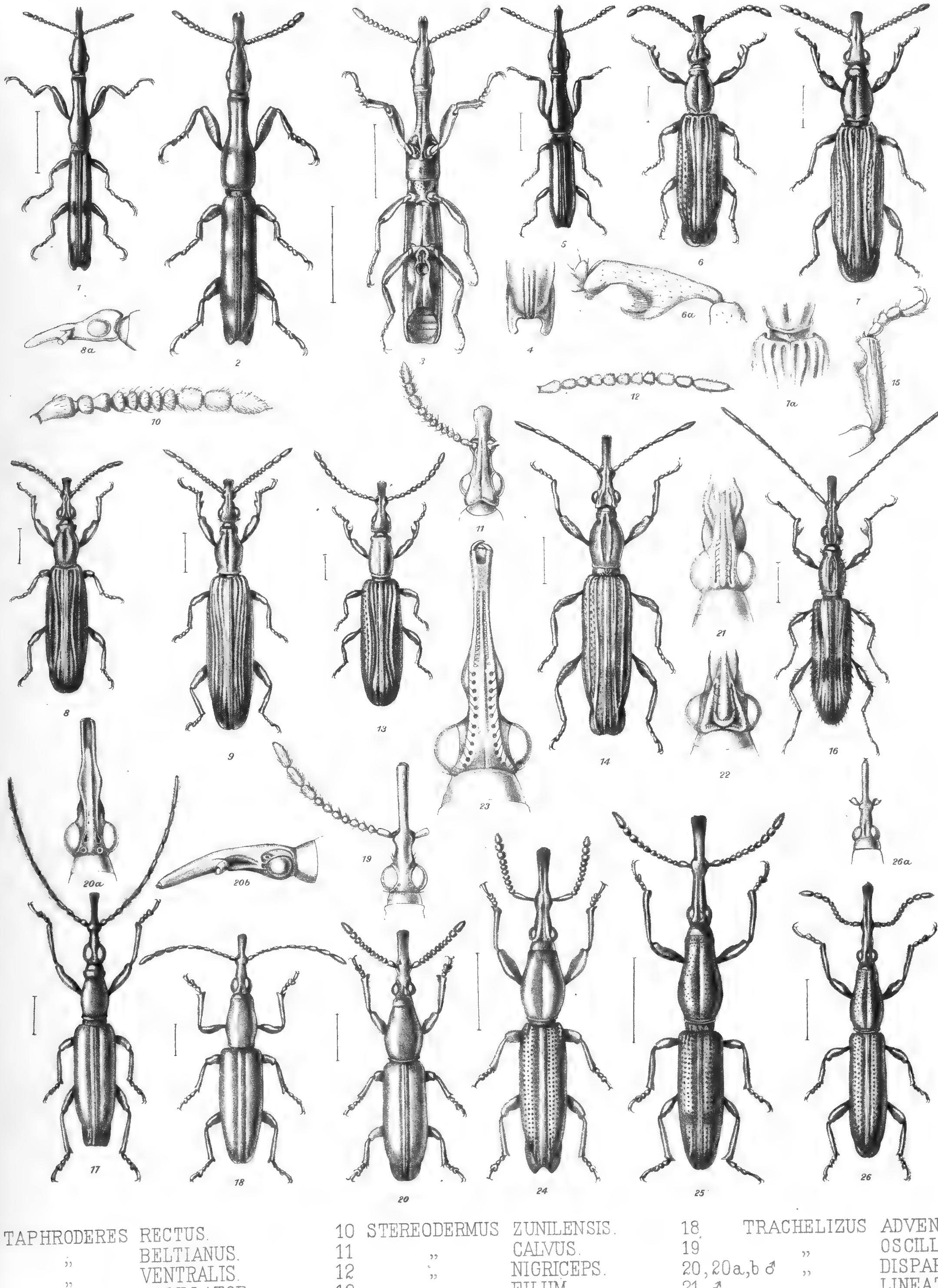

1 TAPHRODERES RECTUS.
2 „ BELTIANUS.
3 „ VENTRALIS.
4 ♀ „ OSCILLATOR.
5 ABACTRUS CHAMPIONI.
6, 6 a STEREODERMUS LONGICEPS.
7, 7 a „ DENTIPENNIS.
8, 8 a „ MITRATUS.
9 „ GODMANI.
10 STEREODERMUS ZUNILENSIS.
11 „ CALVUS.
12 „ NIGRICEPS.
13 „ FILUM.
14 STEREOBATES PEDATOR.
15 „ CHIRIQUENSIS.
16 HOMŒOLIZUS SALVINI.
17 HEPHEBOCERUS MEXICANUS.
18 TRACHELIZUS ADVENA.
19 „ OSCILLATOR.
20, 20 a, b ♂ „ DISPAR.
21 ♂ „ LINEATUS.
22 „ ELEVATUS.
23 ♀ „ SERRATUS.
24 ♂ „ FRACTICORNIS.
25 „ DUCALIS.
26 ♂, 26 a ♀ „ PROLIXUS.

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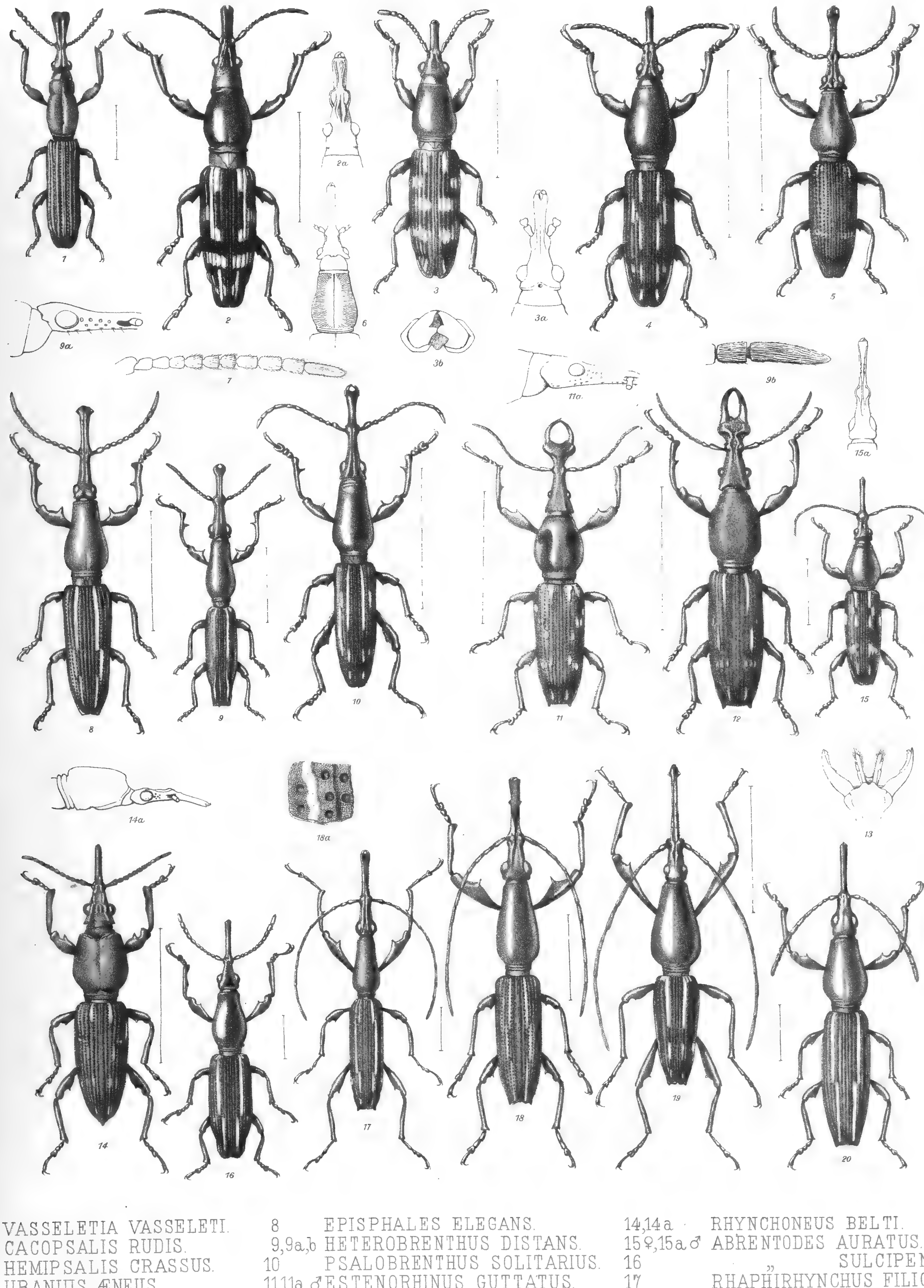

1 VASSELETIA VASSELETI.
2,2a CACOPSALIS RUDIS.
3,3a,b HEMIPSALIS CRASSUS.
4 UBANIUS ÆNEUS.
5 EPISPHALES RUGICOLLIS.
6 „ OPTATUS.
7 „ SIMILIS.
8 EPISPHALES ELEGANS.
9,9a,b HETEROBRENTHUS DISTANS.
10 PSALOBRENTHUS SOLITARIUS.
11,11a, ♂ ESTENORHINUS GUTTATUS.
12 ♂ ARRHENODES FUNEBRIS.
13 „ CONCOLOR.
14,14a RHYNCHONEUS BELTI.
15 ♀,15a ♂ ABRENTODES AURATUS.
16 „ SULCIPENNIS.
17 RHAPHIRHYNCHUS FILICORNIS.
18,18a „ LONGULUS.
19 „ PRINCIPALIS.
20 „ OBSCURUS.

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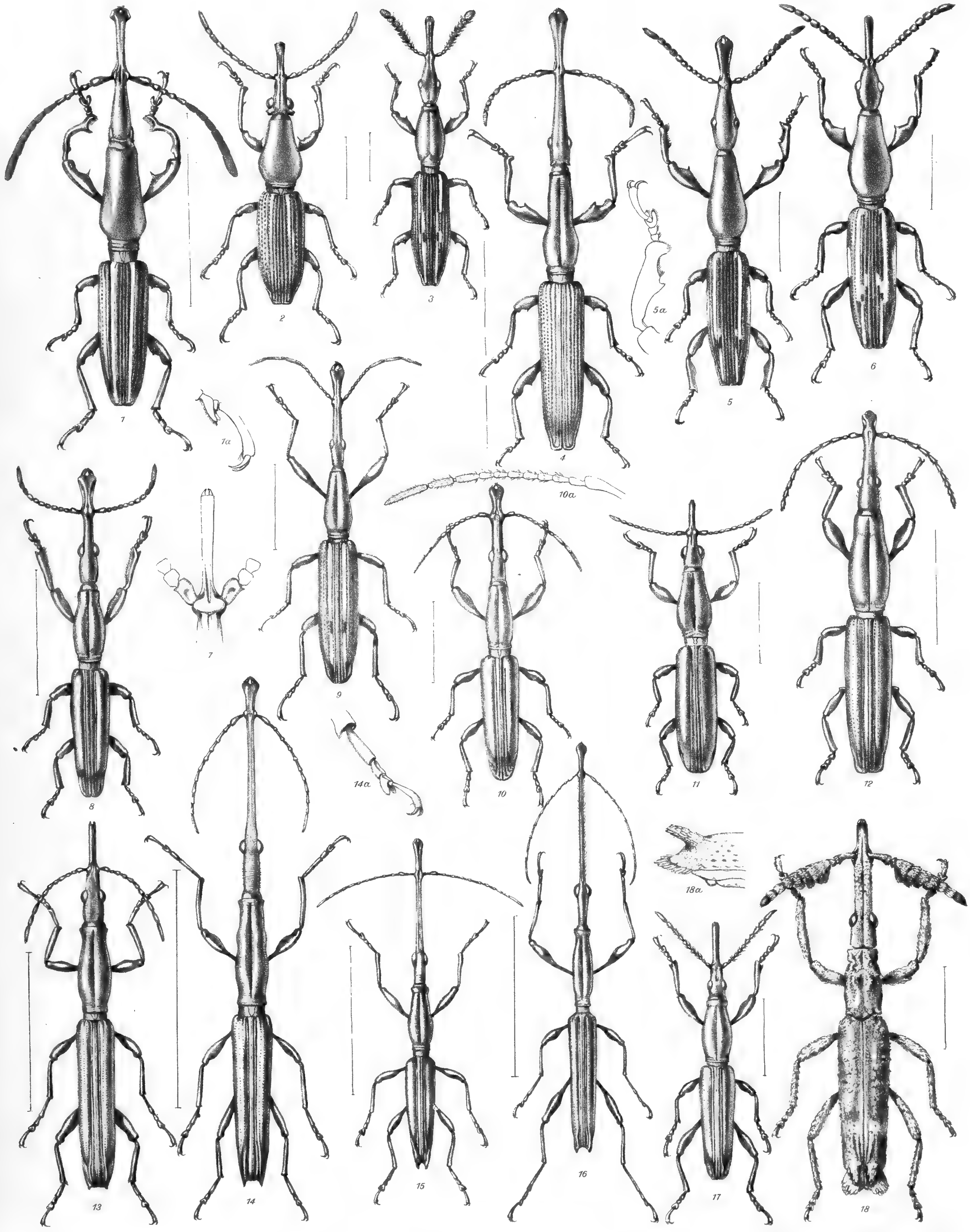

1,1a ♂ CLÆODERES GUATEMALENUS.
2 TMETOGONUS CHIRIQUENSIS.
3 ♂ BRENTHUS CHAMPIONI.
4 ♂ " RUFESCENS.
5,5a ♂ " CLAVIPES.
6 ♀ BRENTHUS QUADRILINEATUS.
7 " LATICORNIS.
8 NEMOBRENTHUS ÆNEIPENNIS.
9 NEMOCORYNA GODMANI.
10,10a " SERICATA.
11 ♀ NEMOCEPHALUS GUATEMALENSIS.
12 ♂ NEMOCEPHALUS FEMORATUS.
13 ♀,14,14a ♂ ACRATUS CHONTALENSIS.
15 ♂ " FILUM
16 ♂,17 ♀ TERAMOCERUS BELTI.
18,18a ULOCERUS LATICORNIS.

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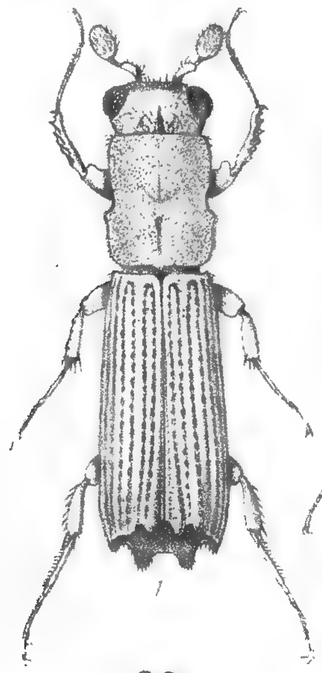
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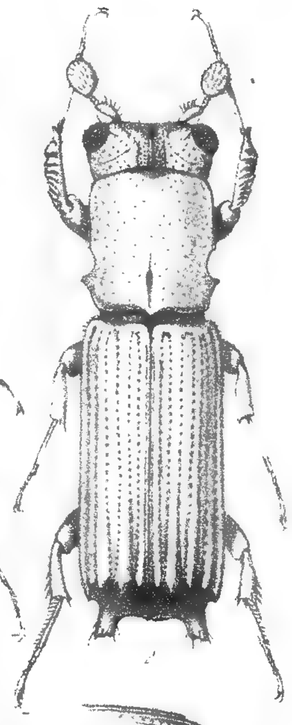
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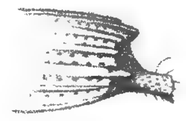
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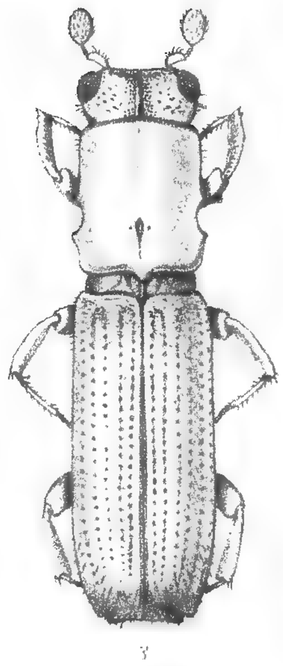
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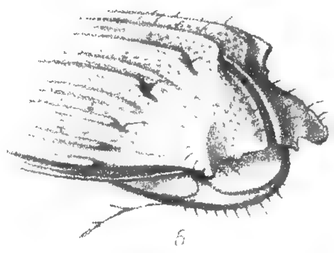
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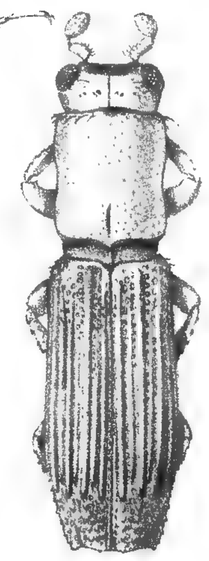
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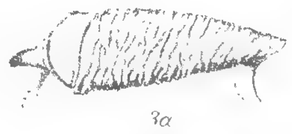
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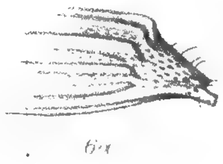
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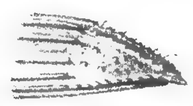
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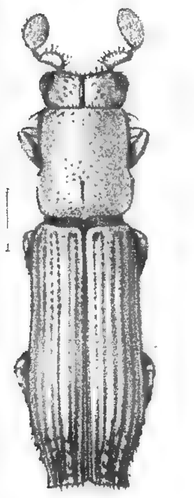
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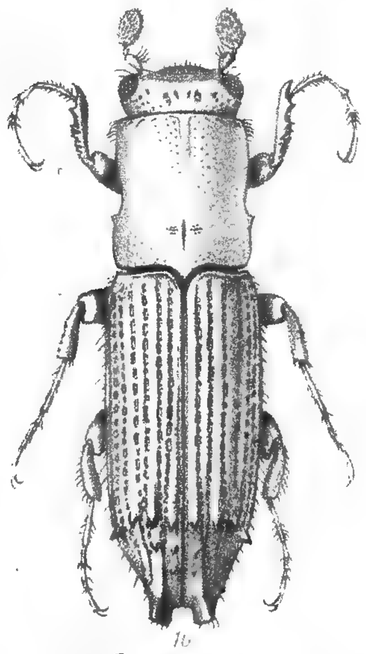
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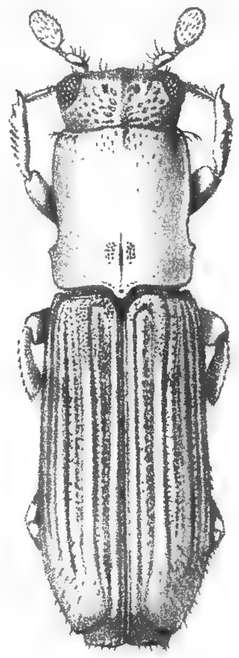
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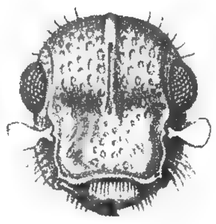
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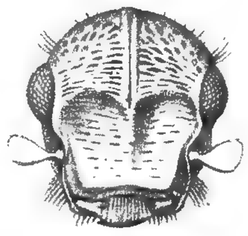
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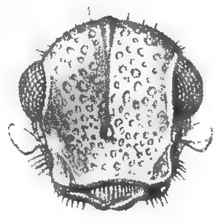
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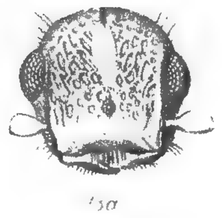
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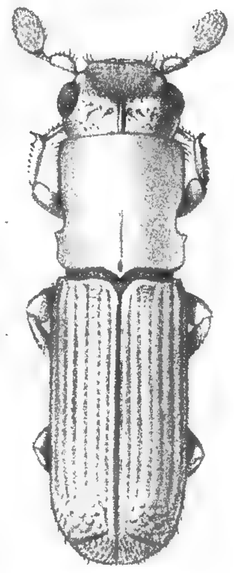
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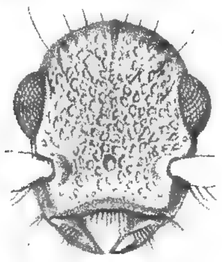
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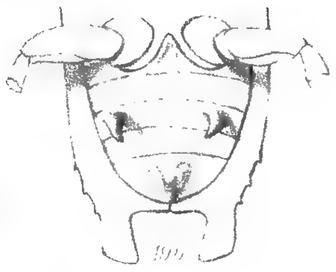
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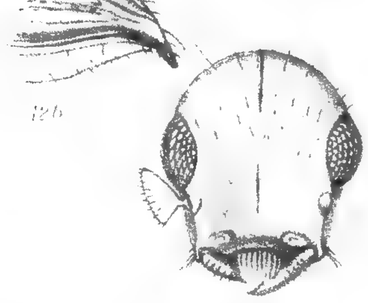
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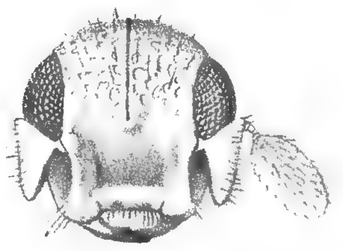
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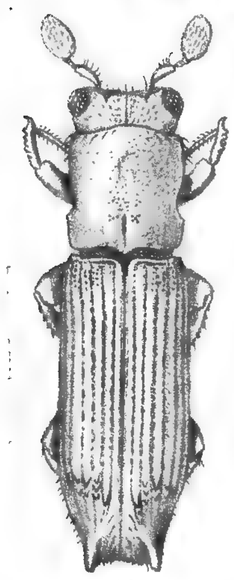
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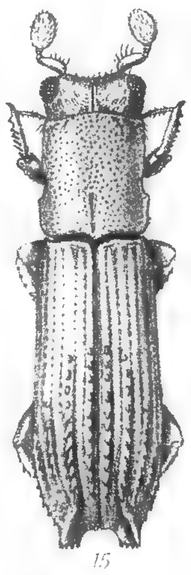
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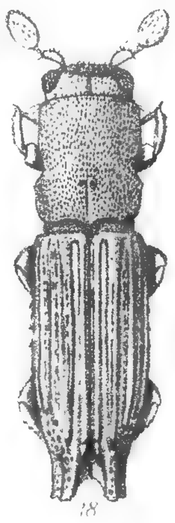
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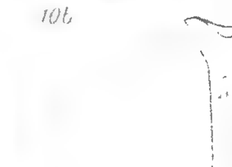
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18a

19a

21

23a

1, 1a	♂	PLATYNOTA	STALEGGERI	1, 1a	♂	PLATYNOTA	LONGICORNIS	13, 13a	♂	PLATYNOTA	NEBRIOCOLLIS
2, 2a, b	♂	"	ANTILLENA	2, 2a, b	♂	"	SUMMA	[illegible]	♂	"	BICOLOR
3, 3a	♀	"	"	[illegible]	♀	"	"	[illegible]	♀	"	"
4	♂	"	MONACHA	12, 12a, b	♂	"	DILABRATA	[illegible]	♂	"	MACULATA
5	♂	"	EXARATA	12, 12a	♀	"	"	[illegible]	♀	"	EXILIPENNIS?
6, 6a	♂	"	CRENIPENNIS	14, 14a, b	♂	"	SALVINI	[illegible]	♂	"	[illegible]
7, 7a	♂	"	LIPARA	15, 15a	♂	"	LUCINDA	[illegible]	♀	"	LUCINDA
8, 8a, b	♂	"	MEDIOCRIS	16, 16a	♀	"	PORCOSA	[illegible]	♀	"	FRONTALIS
				17	♂	"	RUGULOSA				

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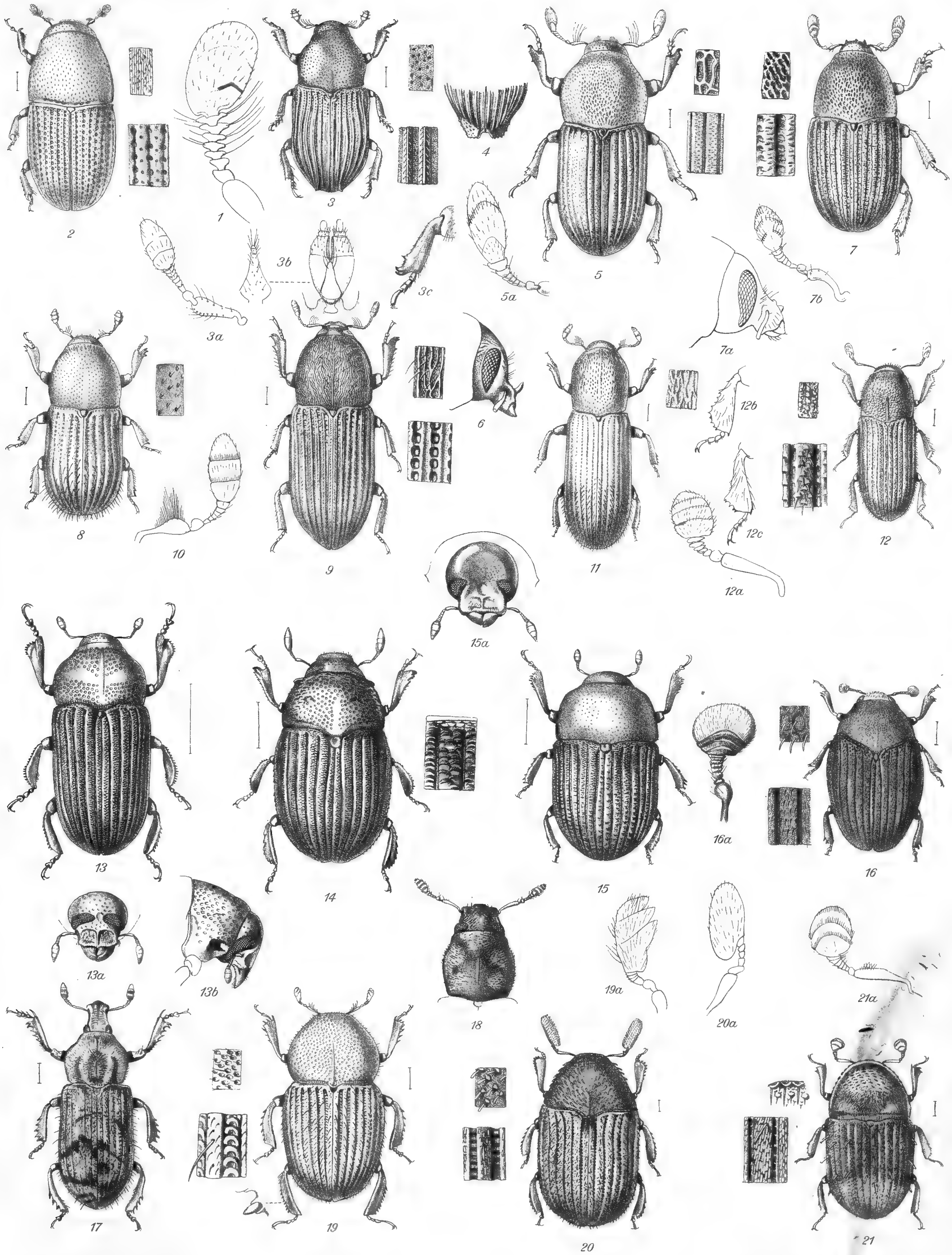
1 ♂, 2 ♀ TESSEROCERUS ERICUS.
3 ♂ " SPINAX.
4, 4a ♂ " BELTI.
5, 5a ♀ " "
6, 6a ♂ CHAPUISIA MEXICANA.
7 ♂ SCOLYTUS DIMIDIATUS.
8, 8a, b ♀ " "
9 " COSTELLATUS.
10, 10a SCOLYTOPSIS PUNCTICOLLIS.
11, 11a, b ♂ CAMPTOCERUS AURICOMUS
12, 12a ♀ " "
13 CERATOLEPIS MACULICORNIS
14 ♂ " ERRANS.



1 LOGANIUS LONGICOLLIS.
2 " ATRATUS.
3,3a-c BOTHROSTERNUS SCULPTURATUS.
4 " BICAUDATUS.
5,5a EUPAGIOCERUS DENTIPES.
6 ♂ PAGIOCERUS RIMOSUS.
7,7a,b ♀ " "
8 CNESINUS PUNCTATUS
9 " PORCATUS.
10 " PALEATUS.
11 " ELEGANS.
12,12a-c PHRIXOSOMA RUDE
13,13a,b PHLŒOBORUS RUDIS
14 PHLŒOBORUS RUGATUS
15,15a " NITIDICOLLIS.
16,16a DENDROSINUS TRANSVERSALIS.
17 ♂.18 ♀ XYLECHINUS IRRASUS.
19,19a EULYTOCERUS CHAMPIONI.
20,20a CHRAMESUS TUMIDULUS.
21,21a. PROBLECHILUS REITTERI.

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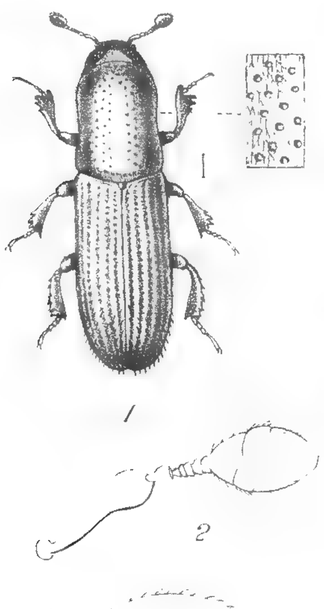

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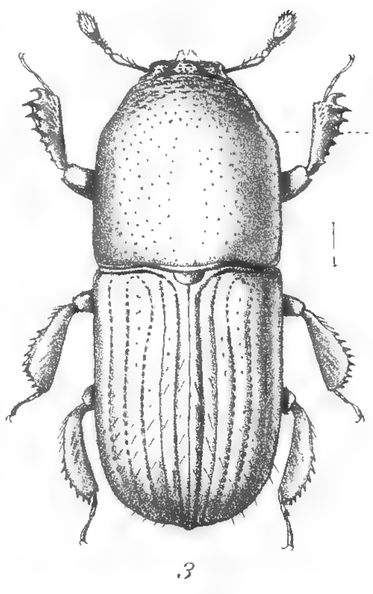

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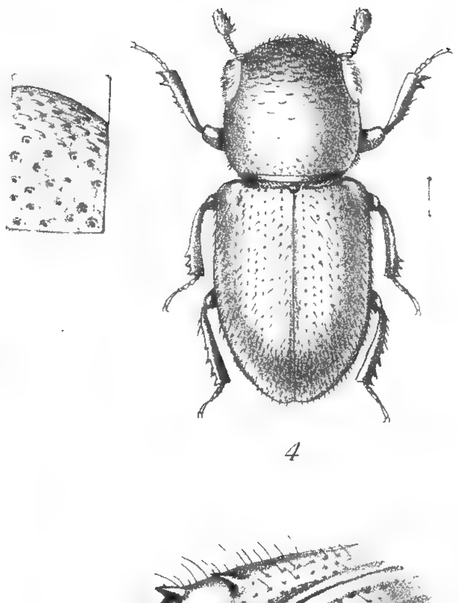

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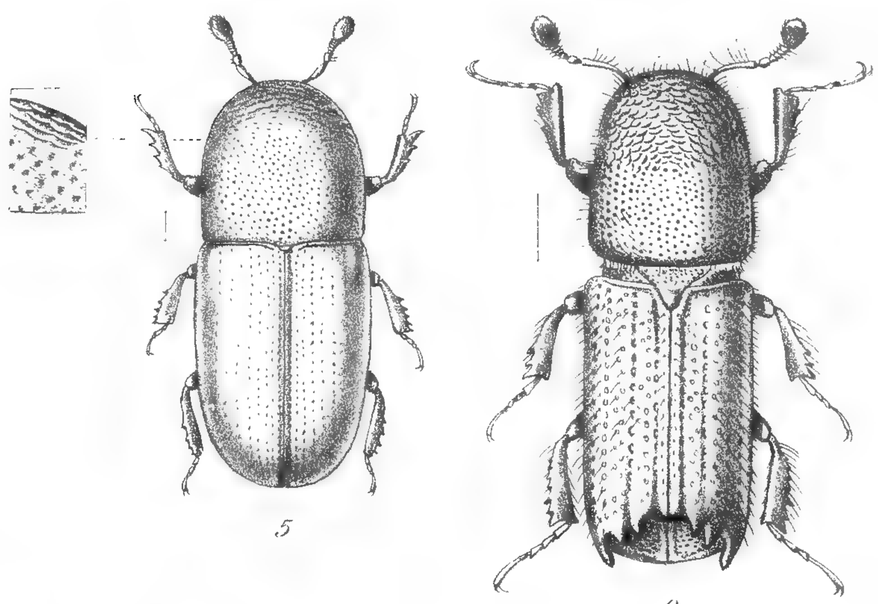

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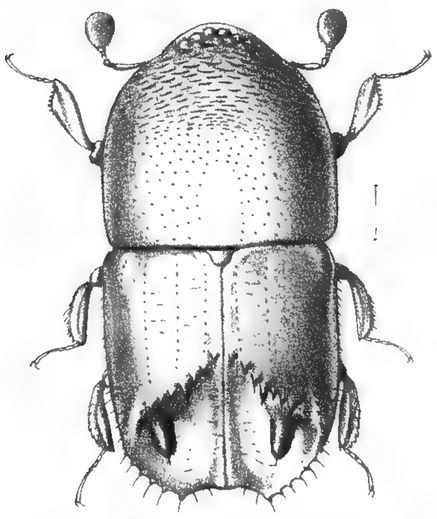

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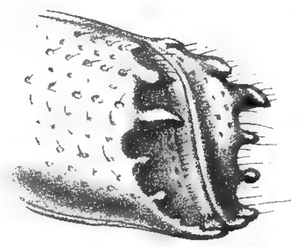

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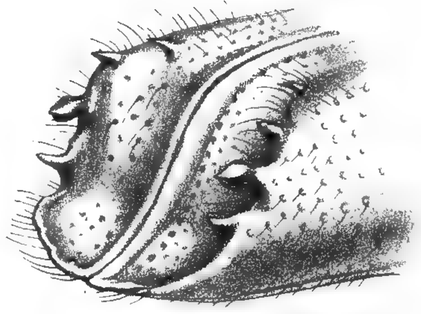

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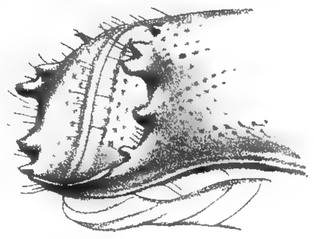

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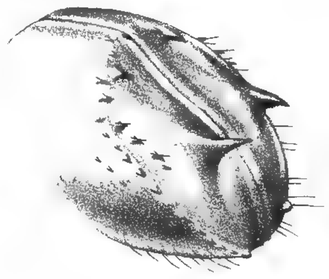

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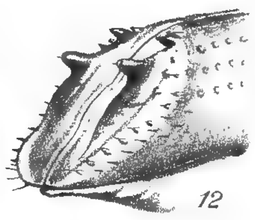

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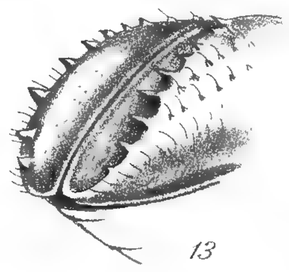

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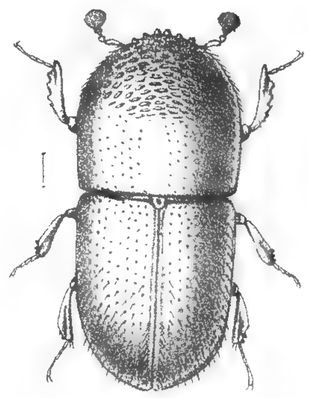

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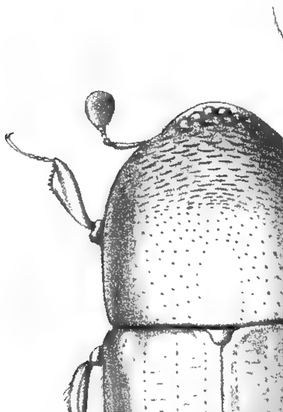

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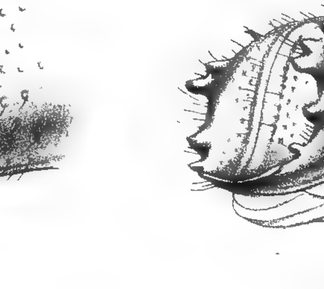

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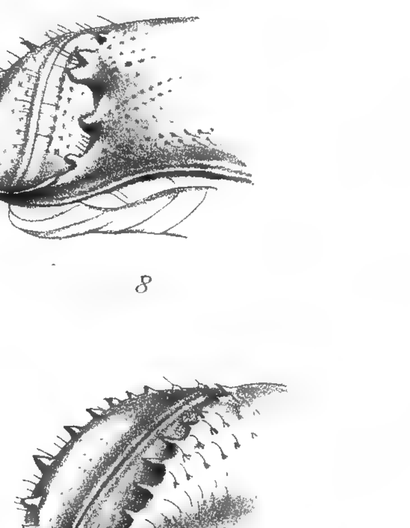

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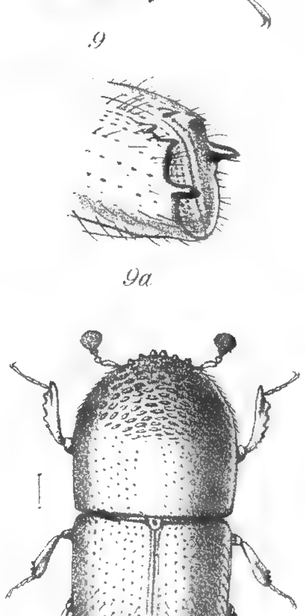

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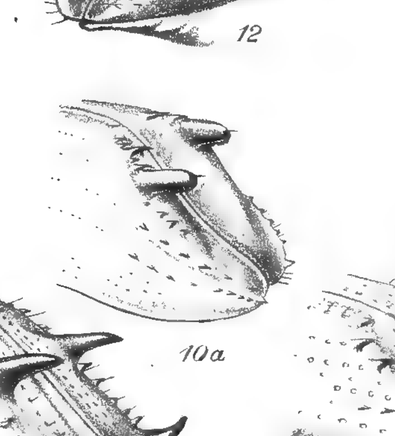

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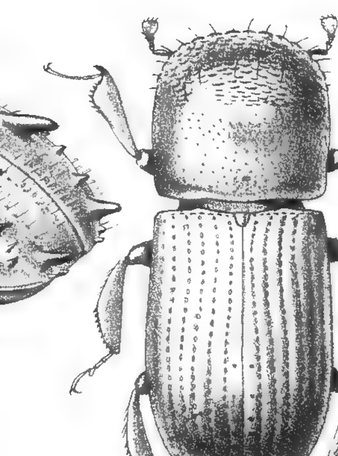

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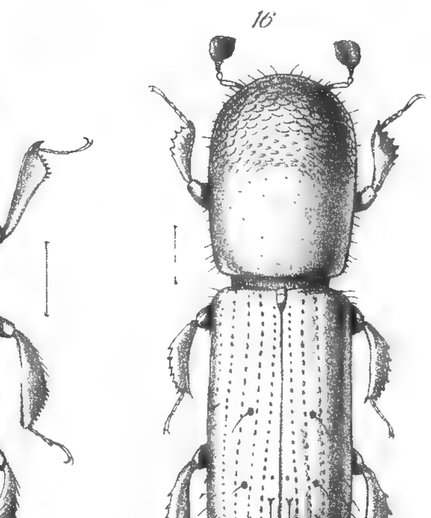

26

1	MICROBORUS BOOPS.	9, 9a	TOMICUS CONCINNUS.	18♂,19♀	XYLEBORUS SPATHIPENNIS
2,2a	PYCNARTHRUM LAMBOTTEI.	10,10a	XYLEBORUS GODMANI.	20	" PRINCEPS.
3	PRIONOSCELES ATRATUS.	11	" SANGUINICOLLIS.	21	" DECLIVIS
4	EPOMADIUS CULCITATUS.	12	" SHARPI.	22♂	HYLOCURUS CANCELLATUS.
5	HEXACOLUS MELANOCEPHALUS.	13	" SALVINI	23♂	" SPINIFEX
6	TOMICUS PLASTOGRAPHUS.	14	" FERCX.	24	STYPHLOSOMA GRANULATUM
7	" INTERSTITIALIS.	15 ♀	" SPINULOSUS.	25	DENDROTERUS MEXICANUS
8	" CRIBRICOLLIS.	16	" CAPUCINUS	26	GNATHOTRICHUS CONSENTANEUS.
		17 ♂	" MONACHUS.		

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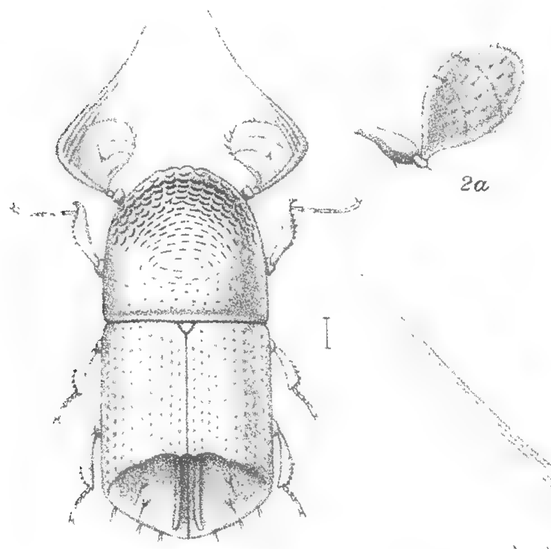
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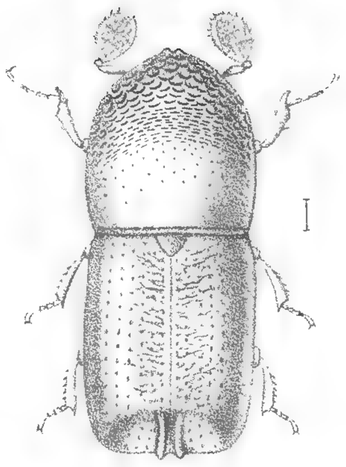
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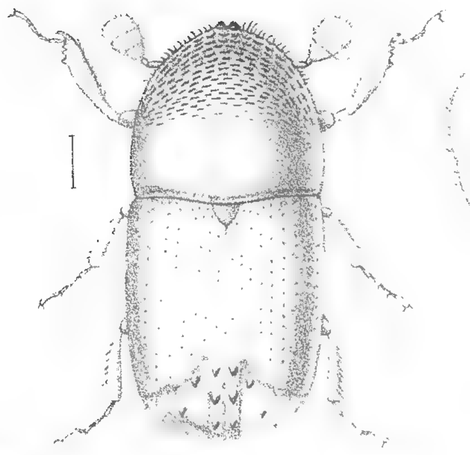
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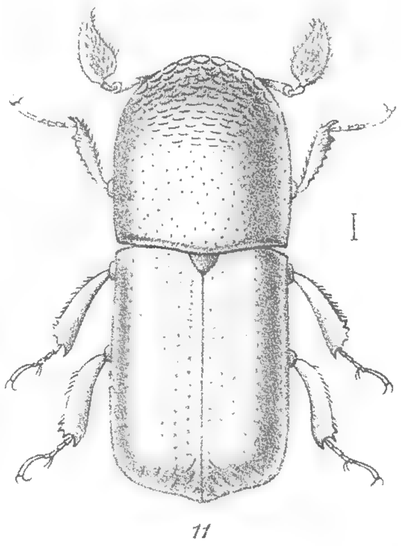
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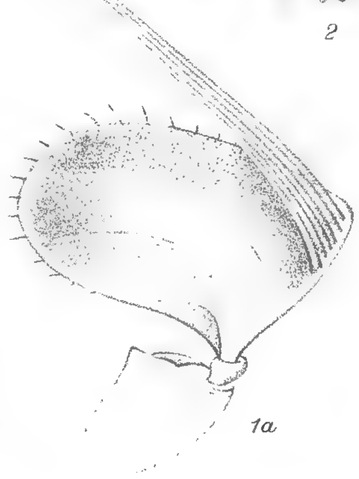
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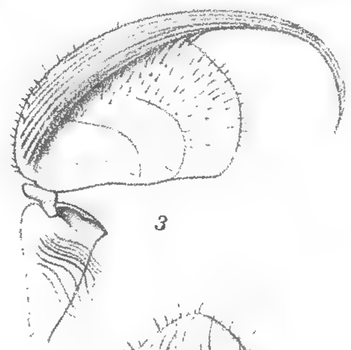
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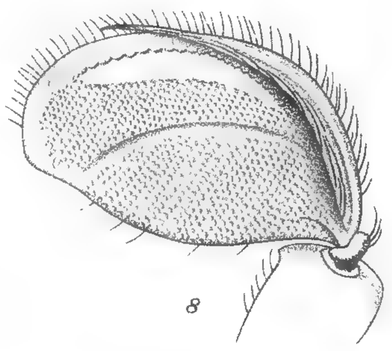
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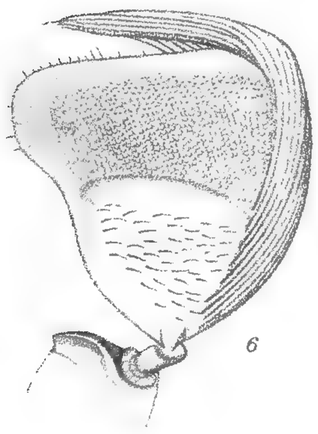
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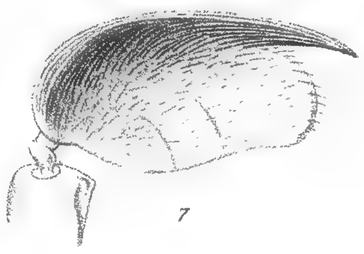
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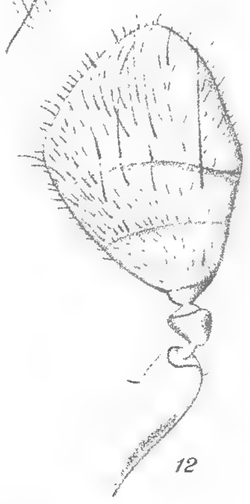
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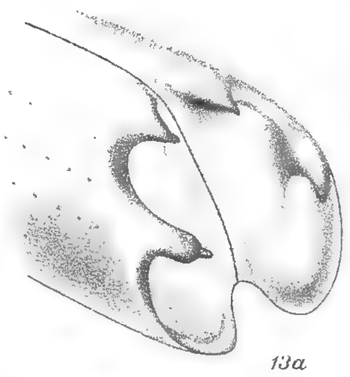
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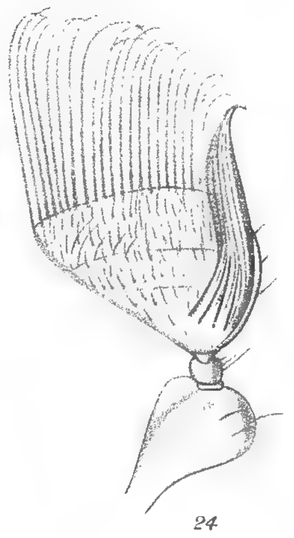
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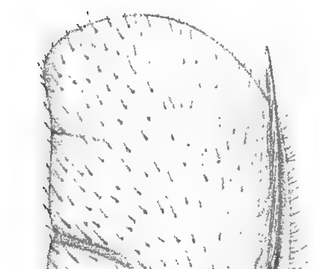
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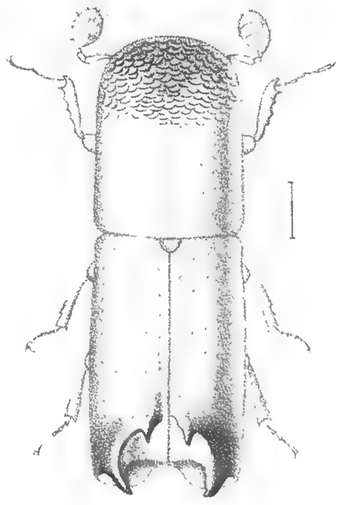
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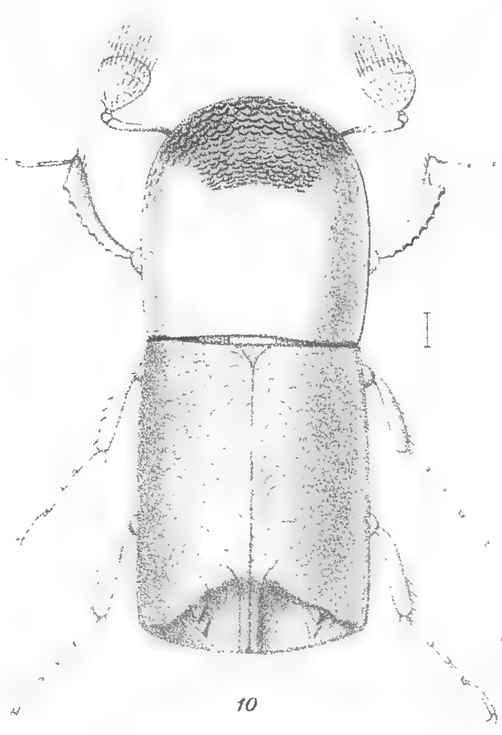
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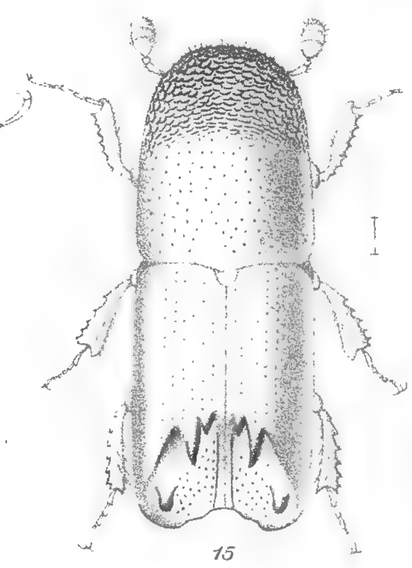
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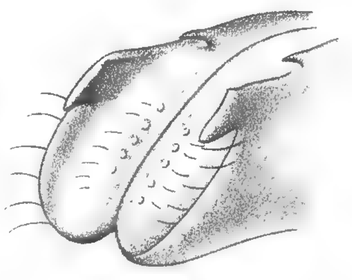
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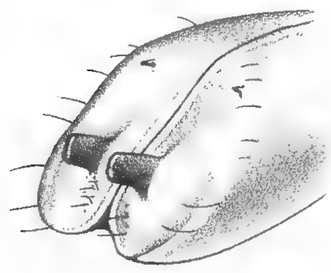
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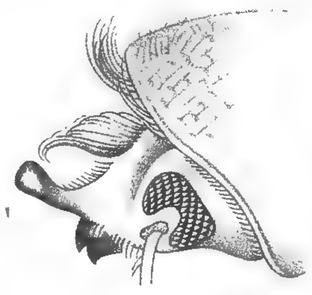
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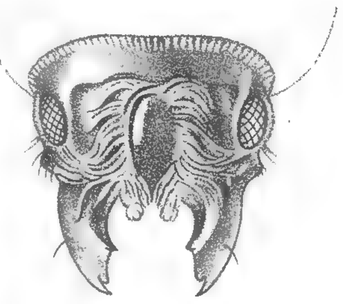
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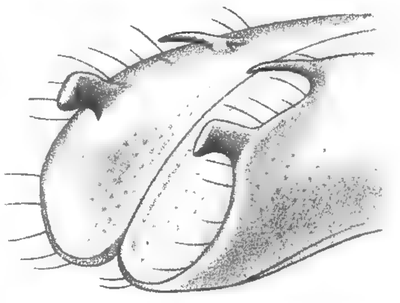
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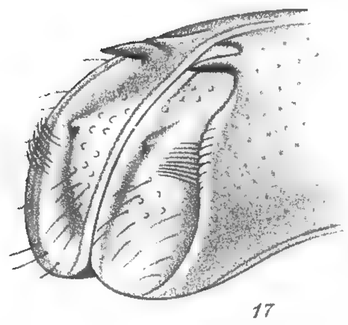
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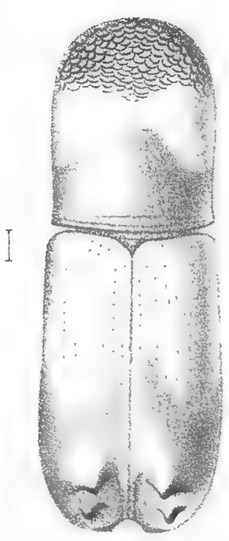
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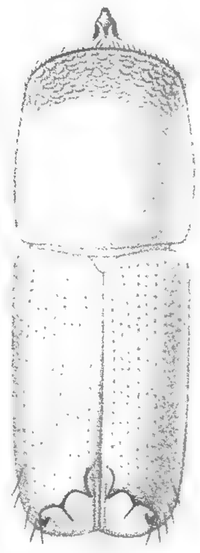
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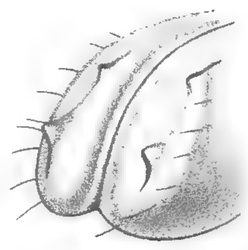
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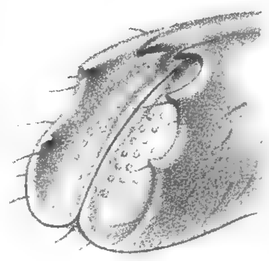
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1,1a ♀	CORTHYLUS	COMPRESSICORNIS.	9 ♀	CORTHYLUS	RUBRICOLLIS.	17 ♂	PTEROCYCLON	TERMINATUM.
2,2a ♂	”	FLAGELLIFER.	10,10a	METACORTHYLUS	NIGRIPENNIS.	18	”	LATERALE.
3 ♀	”	”	11	BRACHYSPARTUS	EBENINUS.	19 ♂	”	BISPINUM.
4 ♀	”	LURIDUS.	12	”	BARBATUS.	20,20a ♀	”	VITTATUM.
5,5a ♂	”	PTYOCERUS.	13,13a ♂	PTEROCYCLON	MELANURA.	21 ♂	”	LOBATUM.
6 ♀	”	”	14 ♂	”	PRÆRUPTUM.	22,22a ♀	”	”
7 ♀	”	COMATUS.	15,15a ♂	”	TOMICOIDES.	23 ♀	”	FERRARII.
8 ♀	”	PANAMENSIS.	16 ♂	”	BIDENS.	24	”	FIMBRIATICORNE.

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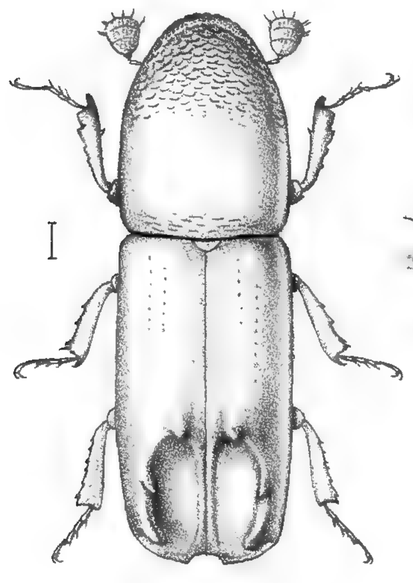

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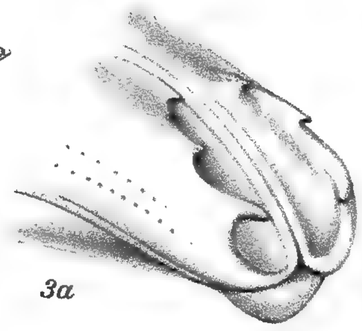

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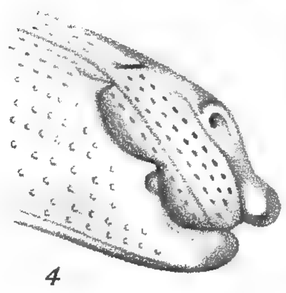

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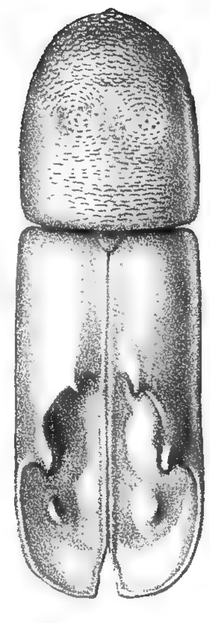

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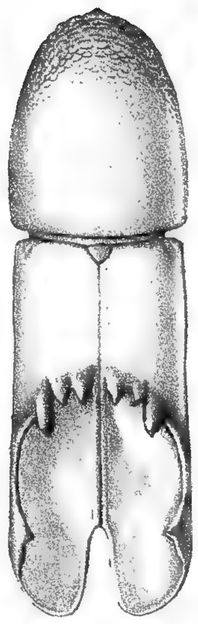

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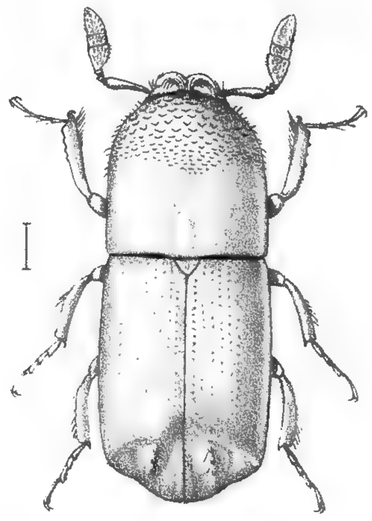

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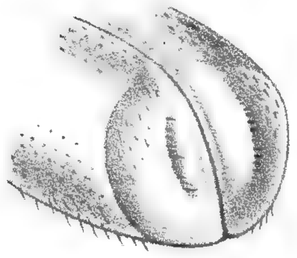

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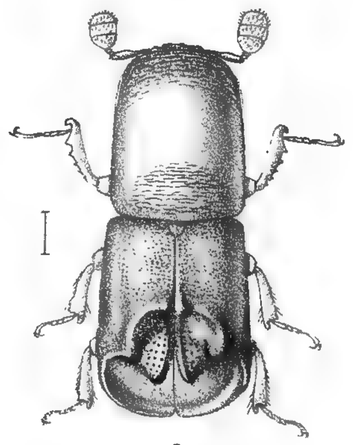

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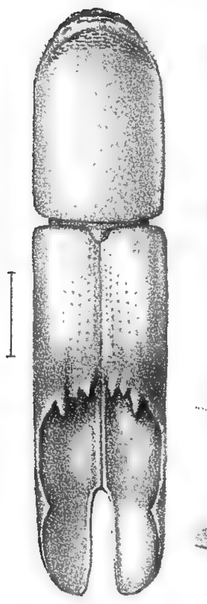

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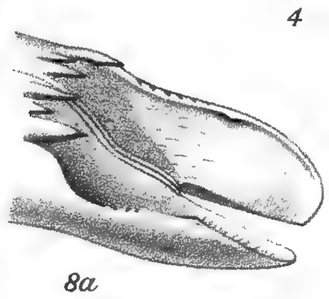

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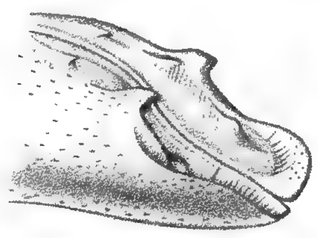

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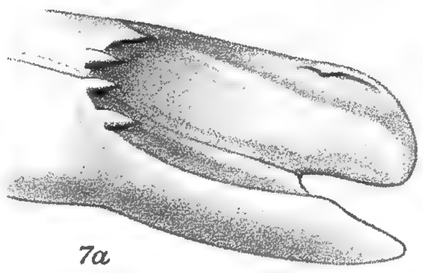

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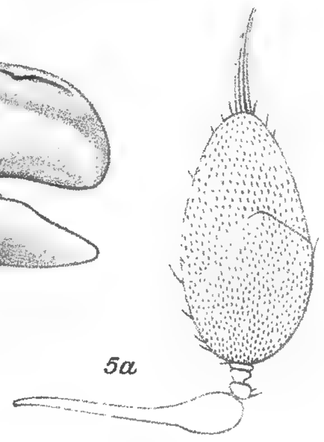

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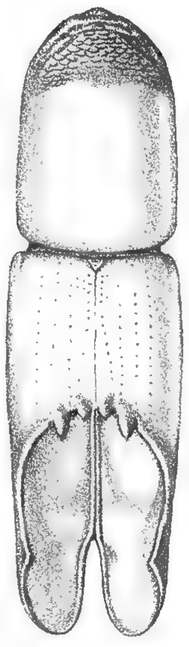

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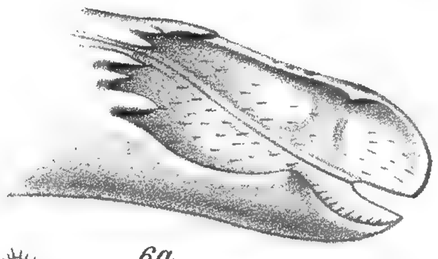

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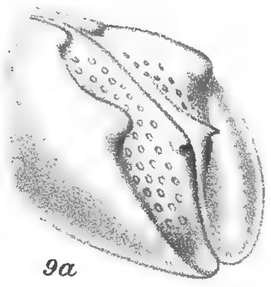

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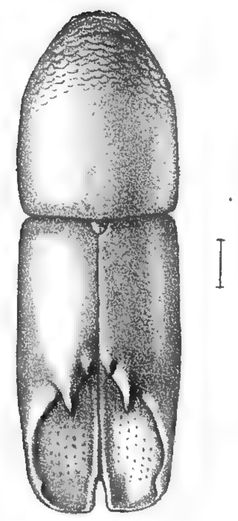

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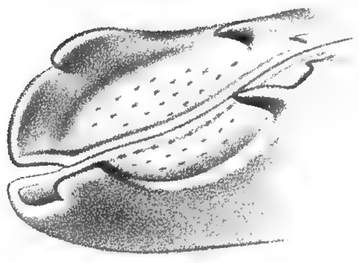

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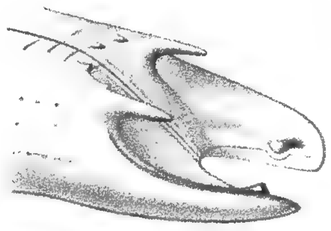

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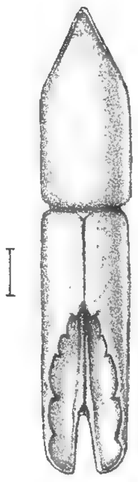

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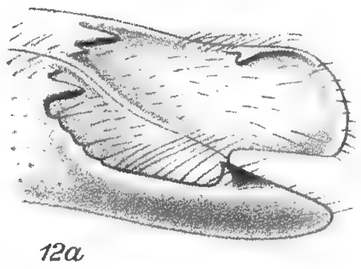

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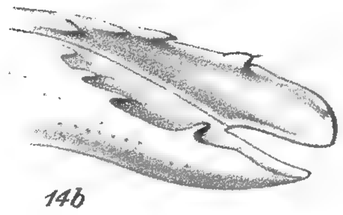

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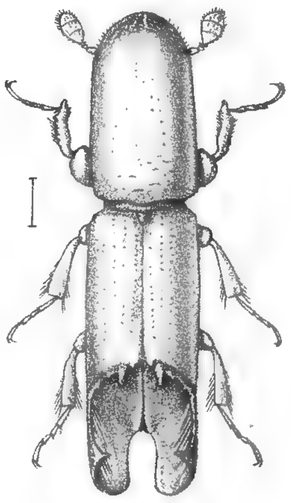

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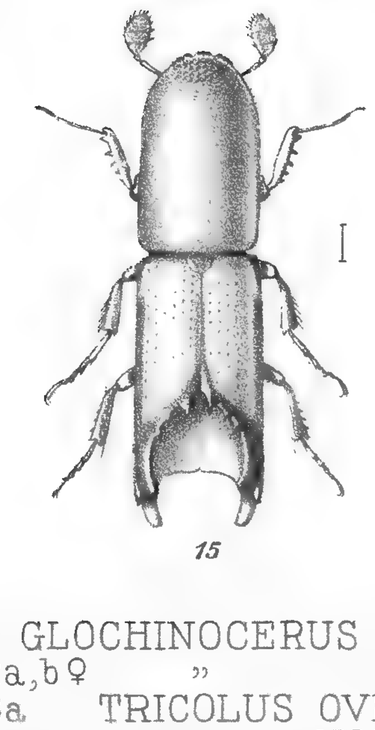

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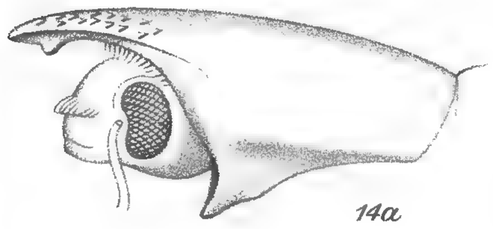

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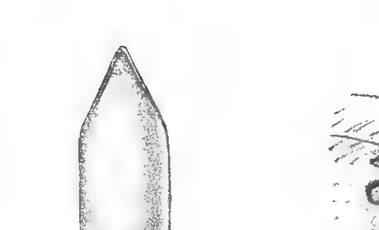

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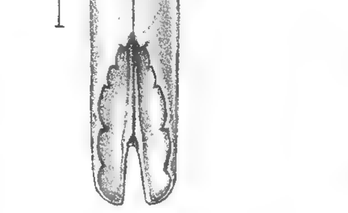

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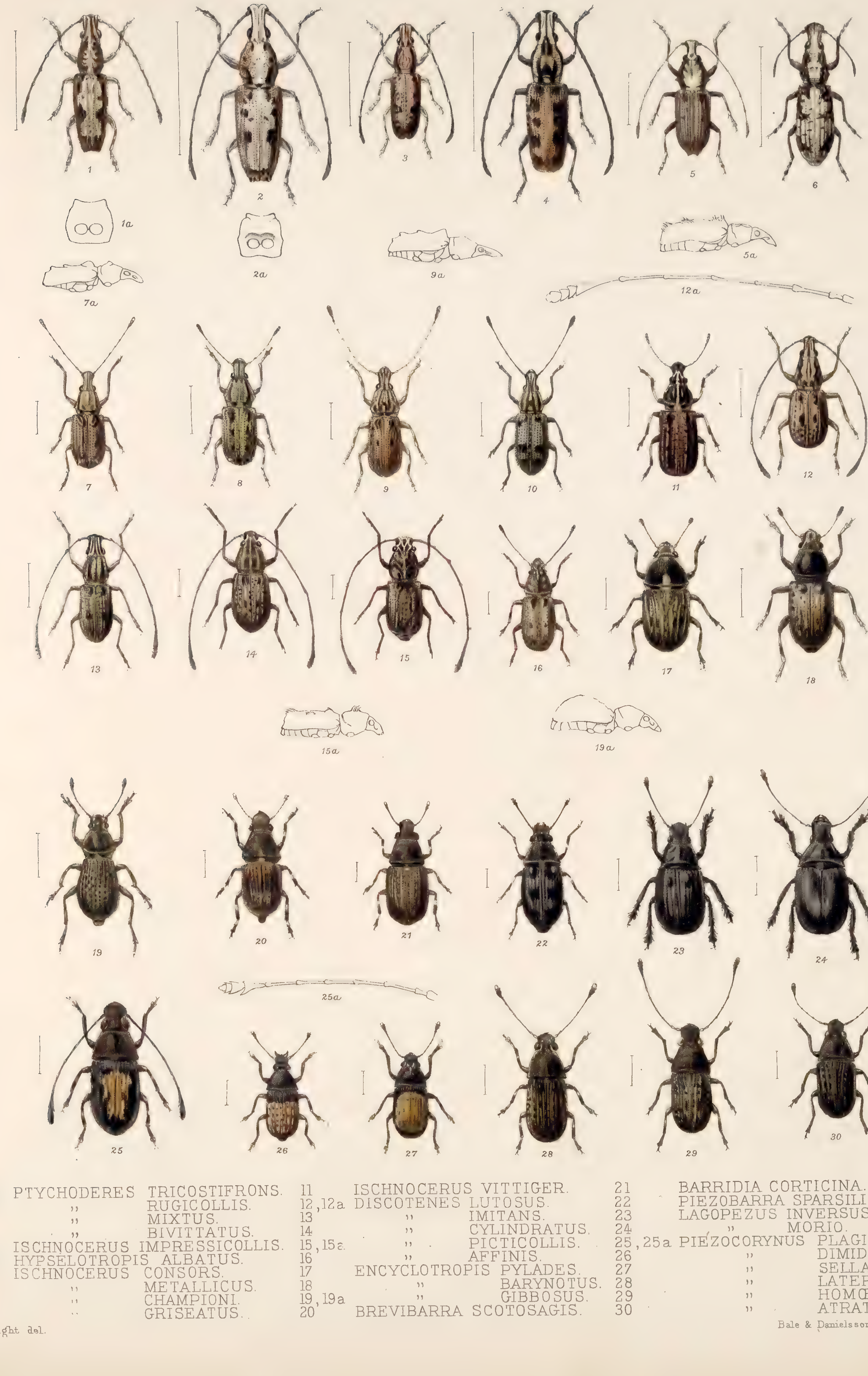
1 ♂ GLOCHINOCERUS RETUSIPENNIS.
2,2a,b ♀ " "
3,3a TRICOLUS OVICOLLIS.
4 " NODIFER.
5,5a,b AMPHICRANUS ELEGANS.
6,6a AMPHICRANUS BALTEATUS.
7,7a " BELTI.
8,8a " TORNEUTES.
9,9a " BREVIPENNIS.
10,10a " COLLARIS.
11,11a " TENUIS.
12,12a AMPHICRANUS FILIFORMIS.
13,13a " TEREBELLA.
14,14a,b " FASTIGATUS.
15,15a " PROPUGNATUS
16,16a " HYBRIDUS

E. Wilson, Cambridge



1,1a PTYCHODERES TRICOSTIFRONS.
2,2a " RUGICOLLIS.
3 " MIXTUS.
4 " BIVITTATUS.
5,5a ISCHNOCERUS IMPRESSICOLLIS.
6 HYPSELOTROPIS ALBATUS.
7,7a ISCHNOCERUS CONSORS.
8 " METALLICUS.
9 " CHAMPIONI.
10 " GRISEATUS.
11 ISCHNOCERUS VITTIGER.
12,12a DISCOTENES LUTOSUS.
13 " IMITANS.
14 " CYLINDRATUS.
15,15a " PICTICOLLIS.
16 " AFFINIS.
17 ENCYCLOTROPIS PYLADES.
18 " BARYNOTUS.
19,19a " GIBBOSUS.
20 BREVIBARRA SCOTOSAGIS.
21 BARRIDIA CORTICINA.
22 PIEZOBARRA SPARSILIS.
23 LAGOPEZUS INVERSUS.
24 " MORIO.
25,25a PIEZOCORYNUS PLAGIFER.
26 " DIMIDIATUS.
27 " SELLATUS.
28 " LATERALIS.
29 " HOMŒUS.
30 " ATRATUS.

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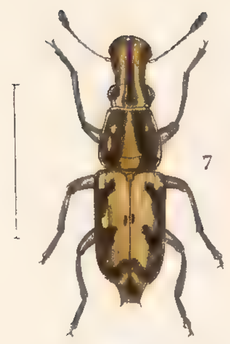
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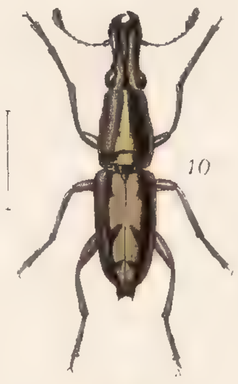
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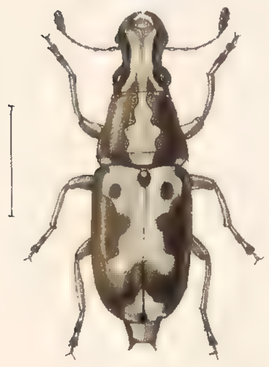
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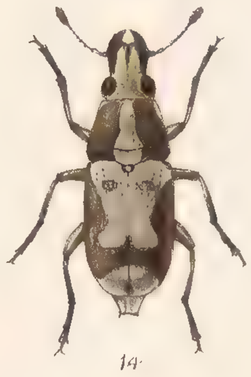
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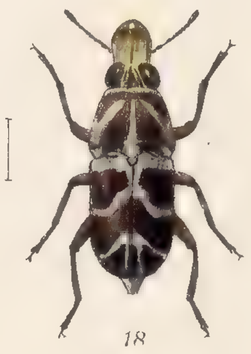
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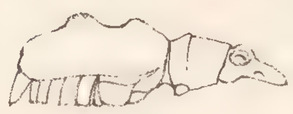
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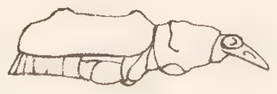
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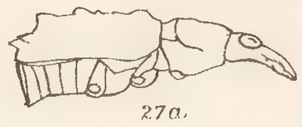
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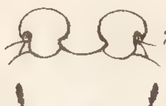
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1	PIEZOCORYNUS	OCCIPITALIS.	11	GYMNOGNATHUS	AMPULLA.	21,21a	MONOCLŒUS GRACILIS.
2	,,	STRIGIFER.	12	,,	THECLA	22,22a	,, LIODERES.
3	,,	SIMPLEX.	13	,,	MEXICANUS.	23,23a,b	,, PARDALIS.
4	ALLANDRUS	ANGULATUS.	14	,,	ABUNDANS.	24	,, PUNCTICOLLIS.
5,5a	STENOCERUS	LONGULUS, *sub-sp.* MEXICANUS.	15	,,	RUFICLAVA.	25,25a	,, CONCOLOR.
6,6a	,,	PLATALEA.	16	,,	CALUS.	26,26a	,, FEMORALIS.
7,7a	GYMNOGNATHUS	SCALARIS.	17	,,	PULCHER.	27,27a,b	GONIOCLŒUS UMBRINUS.
8,8a	,,	CLAUDIA.	18,18a	DOMOPTOLIS	CHAMPIONI.	28,28a	,, ORBITALIS.
9	,,	POLIUS.	19	MONOCLŒUS	ANAS.	29,29a,b	,, FUNEREUS.
10	,,	FEMORALIS.	20,20a	,,	IDÆUS.	30,30a	,, NIGER.

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1, 1a	GONIOCLŒUS	TARSALIS.	11, 11a	GONIOCLŒUS	PUSILLUS.	21, 21a	NEANTHRIBUS	OBTUSUS.
2, 2a	,,	POLITUS.	12	,,	ICAS.	22	,,	PLAGICOLLIS.
3, 3a	,,	MEXICANUS.	13	,,	ORNATICEPS.	23	,,	STEPHANUS.
4, 4a	,,	CURVATUS.	14	,,	INSIGNIS.	24, 24a	,,	APICALIS.
5, 5a	,,	INVERSUS.	15	,,	PARVULUS.	25	,,	GRAMMICUS.
6, 6a	,,	SILVANUS.	16, 16a	HIERA	OCULATA.	26	,,	PISTOR.
7, 7a	,,	LINIFER.	17	TRACHYTROPIS	ASPER.	27	NEMOTRICHUS	ANGULATUS.
8, 8a	,,	REFLEXUS.	18, 18a	NEANTHRIBUS	CHAMPIONI.	28, 28a	,,	ARMATUS.
9, 9a	,,	NANUS.	19, 19a	,,	SEGREGUS.	29	,,	INERMIS.
10	,,	PUMILUS.	20, 20a	,,	HIERONYMUS.	30	,,	SPILOTUS.

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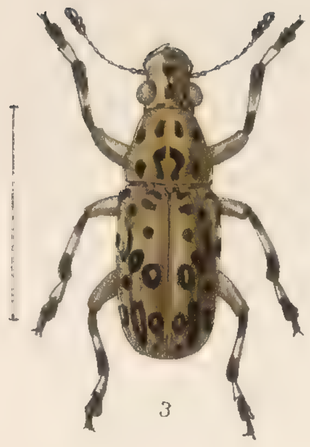
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1 EUPARIUS SIMILIS.
2 " DERMESTINUS.
3,3a " POLIUS.
4 " SUTURALIS.
5 " CŒLEBS.
6 " OCHRUS.
7 " THORACICUS.
8 " FRENATUS.
9 " CHAMPIONI.
10 EUGONUS DECORUS.

11 PHÆNITHON CHAMPIONI.
12 " POLLUX.
13 " CASTOR.
14 " DISCIFER.
15 " NIGRITARSIS.
16 " JUCUNDUS.
17 " LEUCOSPILUS.
18 " PARDALIS.
19 " CÆRULEUS.
20 EUGONOPS CHAMPIONI.

21,21a CYBOSOMA GRANDE.
22 ORMISCUS PARDUS.
23 " TIGRINUS.
24 " ÆQUALIS.
25 " STRATUS.
26 " CENTRALIS.
27 " LATERALIS.
28 " LATICOLLIS.
29 " ELEGANS.
30 " SUBTILIS.

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1 ORMISCUS CALUS.
2 " TENER.
3 " ÆNEUS.
4 " MINOR.
5 " NANUS.
6 " NIGRINUS.
7 " BRUNNEUS.
8 " GUTTATUS.
9 " PHÆOMELAS.
10 " MARMOREUS.
11 EUSPHYRUS CIRCULUS.
12 " BICOLOR.
13 " UNICOLOR.
14 " SCUTELLARIS.
15 " ROS.
16 " RECTUS.
17 " LIODERUS.
18 " LÆVICOLLIS.
19 " FRAGILIS.
20 " VESTITUS.
21 " RUGICOLLIS.
22 EUSPHYRUS ANALIS.
23 " IRPEX.
24 " TENUIS.
25 " INSIGNIS.
26 PAREXILLIS STRIATUS.
27 BRACHYTARSUS NAVICULUS.
28 AMBONODERES PUNCTIGER.
29,29a DYSNOS RUFIPES.
30 NOTIOXENUS ATER.
31,31a ACAROPSIS SHARPI.

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